

SECTION 100 GENERAL:

Titles and headings are for convenience of reference and have no bearing on the interpretation of these specifications.

When a publication is specified, it refers to the most recent date of issue, including interim publications, before the bid opening date for the Project, unless a specific date or year of issue is provided.

In the contract, the words "or equal", referring to a product, material, or process, mean "equal as determined by the Department."

In the contract, the words "as indicated" or "indicated" mean "as indicated or indicated on the contract plans."

SECTION 101 DEFINITIONS AND TERMS:

101.01 Abbreviations:

Wherever the following abbreviations are used in these specifications or in other contract documents, they are to be construed the same as the respective expressions represented:

AAA	Aluminum Alloy Association
AAMA	Architectural Aluminum Manufacturer's Association
AAN	American Association of Nurserymen
AAR	Association of American Railroads
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
AEC	Arizona Electric Code
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AGC	Associated General Contractors of America
AIA	American Institute of Architects

AIEE	American Institute of Electrical Engineers
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALS	American Lumber Standards
ANSI	American National Standards Institute
APA	American Plywood Association
ARA	American Railway Association
AREA	American Railway Engineering Association
ARS	Arizona Revised Statutes
ARTBA	American Road and Transportation Builders Association
ASA	American Standards Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers
ASHVE	American Society of Heating and Ventilating Engineers
ASLA	American Society of Landscape Architects
ASLD	Arizona State Land Department
ASME	American Society of Mechanical Engineers
ASRE	American Society of Refrigerating Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials
AVE	Arithmetic Mean
AWG	American Wire Gauge
AWI	Architectural Woodwork Institute

AWPA	American Wood Preservers' Association
AWPI	American Wood Preservers' Institute
AWS	American Welding Society
AWWA	American Water Works Association
AZI	American Zinc Institute
CISPI	Cast Iron Soil Pipe Institute
CFR	Code of Federal Regulations
CPI	Clay Pipe Institute
CRA	California Redwood Association
CRSI	Concrete Reinforcing Steel Institute
CS	Commercial Standards
DBE	Disadvantaged Business Enterprise
EIA	Electronic Industries Association
FCC	Federal Communications Commission
FGJA	Flat Glass Jobber's Association
FHWA	Federal Highway Administration
FM	Factory Mutual
FSS	Federal Specifications and Standards, General Services Administration
IAL	Independent Approved Laboratory
IAPMO	International Association of Plumbing and Mechanical Officials
IES	Illuminating Engineering Society
IMSA	International Municipal Signal Association
IPCEA	Insulated Power Cable Engineer's Association

ITE	Institute of Transportation Engineers
MAG	Maricopa Association of Governments
MUTCD	Manual on Uniform Traffic Control Devices
NAAMM	National Association of Architectural Metal Manufacturers
NBFU	National Board of Fire Underwriters'
NBS	National Bureau of Standards
NCMA	National Concrete Masonry Association
NCPI	National Clay Pipe Institute
NCPRC	National Clay Pipe Research Corporation
NESC	National Electrical Safety Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NIST	National Institute for Standards and Technology (U.S. Department of Commerce)
NLMA	National Lumber Manufacturer's Association
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Administration/Act
PCA	Portland Cement Association
PLP	Plastic Laminate Producers
PS	Product Standard, Product Standard Section, U.S. Department of Commerce
PUESR	Pacific Utilities Electrical Service Requirements
RMA	Radio Manufacturer's Association
SAE	Society of Automotive Engineers
SSPC	Steel Structures Painting Council

TCA	Tile Council of America
UBC	Uniform Building Code
UL	Underwriters' Laboratories, Inc.
UPC	Uniform Plumbing Code
USS	United States Standard
WCLA	West Coast Lumberman's Association
WCLIB	West Coast Lumber Inspection Bureau
WIA	Woodwork Institute of Arizona
WWPA	Western Wood Products Association

101.02 Definitions:

Wherever in the contract the following are used, the intent and meaning shall be interpreted as follows:

Acceptance:

Activities performed by the Department, or its designated representative, to determine the quality and acceptability of the materials and workmanship incorporated in a project.

Addendum:

A revision to the contract made available to the Bidders after Advertisement for bids and before opening of Proposals.

Advertisement for Bids:

The public announcement inviting bids for the work.

Aggregate:

Inert material such as sand, gravel, broken stone, crushed stone or a combination thereof.

Average Value (AVE):

The arithmetic mean of a set of values, which is defined as the sum of all of the values divided by the number of values.

Award:

The acceptance by the Transportation Board of a proposal to perform the work.

Backfill:

Material placed in an excavated space to fill such space.

Bidder:

An individual, partnership, firm, corporation, or any acceptable combination thereof, or joint venture, submitting a proposal.

Bid Documentation:

Bid documentation shall consist of all writings, working papers, computer printouts, charts, and data compilations that contain or reflect information, data, or calculations used by the Bidder to determine the estimated costs, resources and/or time to be devoted to the work, and all documents used to prepare the bid or proposal, including material relating to the determination and application of:

- Equipment rates
- Overhead rates
- Time schedules
- Labor rates
- Efficiency or productivity rates
- Arithmetic extensions
- Subcontractor and Material Supplier Quotations

Any manuals standard to the industry used by the Bidder in determining the Bid Proposal are also considered Bid Documentation. These manuals may be included in the Bid Documentation by reference and shall show the name and date of the publication and the publisher.

The term "Bid Documentation" does not include documents provided by the Department for the Bidder's use in the preparation of the Bid Proposal.

Bidding Schedule:

The prepared schedule, included as a part of the proposal pamphlet, containing the estimated quantities of the pay items for which unit bid prices are invited.

Bridge:

A structure, including supports, erected over a depression or an obstruction, as water, highway or railway and having a track or passageway for carrying traffic or other moving loads and having an opening measured along the center of the roadway of more than 20 feet between undercopings of abutments or extreme ends of openings for multiple boxes.

- (A) Bridge Length: The greater dimension of a structure measured along the center of the roadway between the backs of abutment backwalls or between ends of bridge floor.
- (B) Bridge Roadway Width: The clear width of structure measured at right angles to the center of the roadway between the bottom of curbs or, if curbs are not used, between the inner faces of parapet or railing.
- (C) Substructure: All that part of a structure below the bearings of simple and continuous spans, skewbacks of arches and top of footings of rigid frames; including backwalls, wingwalls and wing protection railings.
- (D) Superstructure: All that part of a structure above the bearings of simple and continuous spans, skewbacks of arches and top of footings of rigid frames; excluding backwalls, wingwalls and wing protection railings.

Calendar Day:

Any day shown on the calendar, beginning at midnight, extending for a twenty-four hour period, and ending at midnight.

Channel:

A natural or artificial watercourse.

Characteristic:

A measurable property of a material, product, or item of construction.

City, County, Township, or Town:

A subdivision of the State used to designate or identify the location of the proposed work.

Compensable Delay:

See Delay.

Complete in Place:

Complete in place means that payment will be full compensation for all work necessary to complete that portion of the contract in its entirety to the satisfaction of the Engineer, in accordance with the requirements of the contract. When the basis of payment states the work will be paid for complete in place it shall be the contractor's responsibility to determine the elements necessary to complete the work.

When the basis of payment includes a list of elements associated with the complete in place work, the list shall not be construed to limit the work to the listed elements.

Conduit:

A pipe used for receiving and protecting wires or cable.

Construction Easement:

A right to use or control property outside of the established right-of-way limits for a designated project.

Contract:

The written agreement between the Department and the contractor setting forth the obligation of the parties, including the performance of the work, the furnishing of labor and materials and the basis of payment.

The contract includes the advertisement for bids, proposal, bidding schedule, contract agreement and contract bonds, certificates of insurance, Standard Specifications, Special Provisions, project plans, Standard Drawings, documents incorporated by reference, and any supplemental agreements that are required to complete the construction of the work in an acceptable manner, including authorized time extensions, all of which constitute one instrument.

Contract Bonds (Performance Bond and Payment Bond):

The approved forms of security, furnished by the contractor and the contractor's surety or sureties, guaranteeing the full and complete performance of the contract and all supplemental agreements and the payment of all legal debts pertaining to the construction of the project.

Contract Time:

The number of working days or calendar days allowed for completion of the contract, including authorized time extensions.

If a completion date is specified in the contract, the contract time expires on that date.

Contractor:

The individual, partnership, firm, corporation, or any acceptable combination thereof, or joint venture, contracting with the Department for performance of the work.

Controlling Item:

A work activity in which any delay in its completion will result in a delay in the completion of the contract.

Culvert:

Any structure, not classified as a bridge, which provides an opening under the roadway.

Day:

A calendar day.

Deficiency:

Departure from, or noncompliance with, specified criteria.

Delay:

Any event, action, force, or factor that causes the length of time needed to perform the work to increase.

- (A) Compensable Delay. An excusable delay for which the contractor may be entitled to additional compensation.
- (B) Excusable Delay. A delay to the contract or a milestone completion date which was unforeseeable and beyond the contractor's control, for which a time extension may be granted.
- (C) Noncompensable Delay. An excusable delay for which the contractor may be entitled to an extension of time without additional compensation.
- (D) Nonexcusable Delay. A delay to the contract or milestone completion date that was reasonably foreseeable or within the control of the contractor for which no compensation or time extension will be granted.

Department:

The Arizona Department of Transportation as constituted under the laws of the State of Arizona.

Design Purpose:

The set of design criteria for the finished project, or any part thereof, including strength, service life, economy of construction, ease of maintenance, appearance and safety.

Director:

The Arizona Department of Transportation Director, acting by and under the authority of the laws of the State of Arizona.

Engineer:

The State Engineer, acting by and under the authority of the laws of the State of Arizona, or the State Engineer's representative in matters relating to contract development,

administration and construction activities. The use of the word Engineer in these specifications relates to the State Engineer, District Engineer, Resident Engineer, Project Supervisor, or Inspectors within the limits of their authority.

Equipment:

All machinery, equipment, tools and apparatus, together with the necessary supplies for upkeep and maintenance, necessary for the proper construction and acceptable completion of the work.

Equitable Adjustment (Adjustment, Contract Adjustment):

An increase or decrease in the contract price or time made by Supplemental Agreement in accordance with Subsections 108.08 and 109.04.

Excusable Delay:

See Delay.

Extra Work:

Work to be performed by the contractor not provided for in the contract, but found essential for the satisfactory completion of the project.

Highway, Street, or Road:

A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Holidays:

Those days defined as legal holidays in Arizona Revised Statutes, Section 1-301, on the date of the bid opening.

Independent Approved Laboratory:

A testing laboratory which has been approved by the Engineer to perform testing and which has been determined by the Engineer to be free from any conflict of interest.

Inspector:

The Engineer's authorized representative assigned to make detailed inspections of contract performance.

Item (Pay Item):

A detail of work for which payment is made under the contract.

Laboratory:

The testing laboratory of the Department or any other testing laboratory which is certified or approved by the Department.

Liquidated Damages:

A specified amount set forth in the contract as a reasonable estimate of the Department's damages caused by the contractor's failure to substantially complete the contract within the contract time.

Lot:

A designated or measured amount of construction or quantity of material assumed to be produced by the same process.

Lump Sum:

The price bid by a contractor as a single amount for a complete contract item as defined by the specifications, or a price proposed by a contractor as a single amount for the performance of extra work.

Major Items:

A major item is an item whose total cost, determined by multiplying the bidding schedule quantity and the contract unit price, is equal to or greater than the amount indicated below.

A major item will remain a major item unless it is completely eliminated.

When the original total contract dollar amount is:		A major item shall be equal to or greater than the following amount:
Equal to or greater than:	But less than:	(in dollars)
0.00	100,000	5,000
100,000	200,000	10,000
200,000	450,000	15,000
450,000	750,000	25,000
750,000	1,100,000	35,000
1,100,000	1,500,000	45,000
1,500,000	2,000,000	55,000
2,000,000	2,500,000	65,000
2,500,000	3,000,000	75,000
3,000,000	5,000,000	85,000
5,000,000	7,000,000	120,000

When the original total contract dollar amount is:		A major item shall be equal to or greater than the following amount: (in dollars)
Equal to or greater than:	But less than:	
7,000,000	10,000,000	150,000
10,000,000	25,000,000	250,000
25,000,000	50,000,000	350,000
over	50,000,000	500,000

Materials:

Substances used in the construction of the project.

Median:

The untraveled portion of the highway, street or road which separates the traveled roadway from traffic flowing in opposite directions.

Minor Item:

Any item which is not a major item.

Noncompensable Delay:

See Delay.

Non-Excusable Delay:

See Delay.

Notice of Award:

Written notice to the contractor stating that its proposal has been accepted by the Transportation Board.

Pavement Structure:

The combination of subbase, base course, and/or surface course placed to support the traffic load.

- (A) Subbase Course: One or more layers of specified or selected materials, of designed thickness, placed on the subgrade to support a base course.
- (B) Base Course: One or more layers of specified materials, of designed thickness, placed on a subbase course or a subgrade to support a surface course.

- (C) Surface Course: One or more layers of specified materials designed to accommodate the traffic load, the top layer of which resists skidding, traffic abrasion and the disintegrating effects of climate. The top layer is sometimes called a "wearing course."

Plans:

The project plans, Standard Drawings, working drawings and supplemental drawings, or reproductions thereof, approved by the Engineer, which show the location, character, dimensions and details of the work to be performed. All such documents are to be considered as a part of the plans whether or not they are reproduced in the proposal pamphlet.

(A) Standard Drawings:

Drawings approved by the Department for repetitive use, showing details to be used where appropriate.

All Standard Drawings approved by the Department plus subsequent revisions and additions are listed on the project plans along with the latest (current) revision dates.

Standard Drawings are available for purchase from:

Records Administration Section
Engineering Records
Arizona Department of Transportation
1655 West Jackson, Room 112F
Phoenix, Arizona 85007 (602) 712-7498

(B) Project Plans:

Specific details and dimensions peculiar to the work which are supplemented by the Standard Drawings insofar, as applicable.

(C) Working Drawings and Supplemental Drawings:

Supplemental design sheets, shop drawings, or similar data which the contractor is required to submit to the Engineer such as stress sheets, erection plans, falsework plans, forming plans for cast-in-place bridge girders, framework plans, cofferdam plans, bending diagrams for reinforcing steel, computations, or any other supplementary data required of the contractor.

Professional Engineer:

A person who has been granted registration in one or more branches of engineering by the Arizona State Board of Technical Registration, and is authorized to practice professionally in the State of Arizona. If a branch of engineering is included in the title, such as Professional Civil Engineer, registration in that branch shall be required.

Profile Grade:

The trace of a vertical plane intersecting the top surface of the proposed wearing surface, usually along the longitudinal center line of the roadbed. Profile grade means either elevation or gradient of such trace according to the context.

Project:

The specific section of the highway on which construction is to be performed as described in the contract.

Proposal (Bid, Bid Proposal):

The offer of a bidder, on the prescribed forms, to perform the work at the prices quoted and within the time specified.

Proposal Form:

The prescribed form on which the bidder's offer is submitted.

Proposal Guaranty (Surety Bid Bond):

The security furnished with a bid to guarantee that the bidder will enter into the contract if its proposal is accepted.

Quality Control:

Contractor or supplier techniques and activities that are performed or conducted to fulfill the contract requirements.

Random Sampling:

Sampling performed so that each increment in the lot has an equal chance of being chosen, with sampling frequency determined by the use of random numbers.

Range:

Specified limits of acceptability for a measured characteristic.

Reasonably Close Conformity:

Where working tolerances are specified, reasonably close conformity means compliance with such working tolerances. Where working tolerances are not specified, reasonably close conformity means compliance with reasonable and customary manufacturing and construction tolerances.

Registered Engineer:

See Professional Engineer.

Registered Land Surveyor:

A person who has been granted registration in Land Surveying by the Arizona State Board of Technical Registration for Architects, Assayers, Engineers, Geologists, Landscape Architects and Land Surveyors, and who is authorized to practice professionally in the State of Arizona.

Responsive Bid:

A bid which meets all requirements of the proposal pamphlet.

Responsible Bidder:

A bidder that is a responsible contractor.

Responsible Contractor:

A contractor that has the requisite skill, resources, desire, and integrity to complete the work in conformance with the provisions of the contract.

Right-of-Way:

A general term denoting land, or an interest therein, as acquired for or devoted to transportation purposes.

Roadbed:

The graded portion of a highway within top and side slopes, prepared as a foundation for the pavement structure and shoulders.

Roadside:

A general term denoting the area adjoining the outer edge of the roadway. Extensive areas between the roadways of a divided highway may also be considered roadside.

Roadside Development:

Items which provide for the preservation of landscape materials and features; the rehabilitation and protection against erosion of all areas disturbed by construction through seeding, sodding, mulching and the placing of other ground covers; and such planting and other improvements as may increase the effectiveness and enhance the appearance of the highway.

Roadway:

That portion of the right-of-way required for construction, limited by the outside edges of slopes, including ditches, channels and all structures pertaining to the work.

Section (When referring to the Specifications):

A numbered article or group of related articles forming a part of the specifications and applying to or controlling the procedure of an operation or regulation.

Shoulder:

The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use and for lateral support of base and surface courses.

Sidewalk:

That portion of the roadway primarily constructed for the use of pedestrians.

Specifications:

The compilation of provisions and requirements for the performance of prescribed work including:

- (A) Standard Specifications: This book of specifications, which is approved for general application and repetitive use.
- (B) Special Provisions: Additions and revisions to the Standard Specifications covering conditions and requirements peculiar to an individual project.

Standard Deviation (s):

A measure of variability that can be calculated from the differences between individual measurements in a group and their average. Unless otherwise specified, standard deviation is calculated as follows:

$$s = \sqrt{\frac{(X_i - AVE)^2}{n - 1}}$$

Where: s = standard deviation
 x_i = individual value
 AVE = average value
 n = number of values

State:

The State of Arizona, acting through its authorized representatives in the Arizona Department of Transportation.

Structures:

Bridges, culverts, catch basins, drop inlets, retaining walls, manholes, endwalls, buildings, sewers, service pipes, under drains, foundation drains and other features which may be encountered in the work and not otherwise classified.

Subcontractor:

An individual, partnership, firm, corporation, or any acceptable combination thereof, or joint venture, to which the contractor sublets a part of the contract with the approval of the Department.

Subgrade:

The roadbed materials beneath the pavement structure. The top prepared surface of the subgrade is called finished subgrade elevation.

Superintendent:

The contractor's authorized representative in responsible charge of the work.

Supplemental Agreement:

A written agreement between the Department and the contractor covering work not otherwise provided for in the contract, for extensions or reductions of contract time or revisions in or amendments to the terms of the contract. A supplemental agreement becomes a part of the contract when signed by the contractor and the Department.

Supplier:

One who fabricates, or processes an item off the project site, and who may or may not deliver this item to the project. For purposes of this definition, a supplier shall not include one who establishes a fabricating process or facility expressly for use of the project, whether on or off the project site; or one who performs work on the project site that is incorporated into the project.

Surety:

The corporate body or bodies bound with and for the contractor, for the full and complete performance of the contract and for payment of all debts pertaining to the work.

Transportation Board:

The Transportation Board acting under authority of the laws of the State of Arizona.

Traveled Way:

The portion of the roadway for the movement of vehicles, exclusive of shoulders.

Unbalanced Bid, Materially:

A bid that generates a reasonable doubt that award to the bidder submitting a mathematically unbalanced bid will result in the lowest ultimate cost to the Department.

Unbalanced Bid, Mathematically:

A bid containing lump sum or unit bid prices that do not reflect reasonably anticipated actual costs plus a reasonable proportionate share of the bidder's anticipated profit, overhead costs, and other indirect costs.

Unit Price:

The price bid by the contractor for one unit of work, as defined by the specifications.

Work:

Work shall mean the furnishing of all labor, materials, equipment and other incidentals necessary or convenient to the successful completion of the project and the carrying out of all the duties and obligations imposed by the contract.

Working Day:

A day, exclusive of Saturdays, Sundays and State-recognized holidays, on which weather and other conditions not under the control of the contractor permit construction operations to proceed for the major part of the day with the normal working force engaged in performing the controlling item or items of work which would be in progress at that time.

SECTION 102 BIDDING REQUIREMENTS AND CONDITIONS:**102.01 Advertisements for Bids:**

The advertisement for bids may contain the following information:

- Project number and name of highway,
- Route number and mileposts or reference markers.
- Date, time and place of public opening of bids,
- Location and length of project,
- General description of work, principal items and approximate quantities,
- Specified contract time (working days, calendar days or fixed dates) for completion of contract work,
- Statement of proposal requirements,
- Manner in which project plans and specifications may be obtained and the cost of same.
- Type and amount of proposal guaranty.

102.02 Prequalification of Bidders:

Prior to submitting a bid, the bidder will (unless waived by the Department) be required to be prequalified with the Department to bid on the project. The submission of Prequalification information and determination of Prequalification shall be in accordance with the requirements of the Rules for Prequalification of Contractors as approved and adopted by the Department.

102.03 Suspension from Bidding:

The Department may suspend any person and any subsidiary or affiliate of any person from further bidding to the Department and from being a subcontractor or a supplier or otherwise participating in the work:

- (A) If that person or any officer, director, employee or agent of that person is convicted, in this State, or any other jurisdiction, of a crime involving any of the following elements or actions:
 - (1) Entering into any contract, combination, conspiracy or other unlawful act in restraint of trade or commerce;
 - (2) Knowingly and willfully falsifying, concealing, or covering up a material fact by trick, scheme, or device;
 - (3) Making false, fictitious, or fraudulent statements or representations;
 - (4) Making or using a false writing or document knowing it to contain a false, fictitious, or fraudulent statement or entry;
 - (5) Misrepresentation or false statement on any application for bonding;
 - (6) Misrepresentation or false statement on any application for prequalification; or
- (B) If the Department makes a finding of any of the above or finds that the contractor is not a Responsible Bidder or a Responsible Contractor.

Under this subsection, a person means any individual, partnership, joint venture, corporation, association or other entity formed for the purpose of doing business as a contractor, subcontractor or supplier.

102.04 Contents of Proposal Pamphlet:

Upon request, the Department will furnish the prospective bidder a proposal pamphlet. This pamphlet will state the location and description of the contemplated construction and will show the approximate estimate of the various quantities and kinds of work to be performed or materials to be furnished and will have a schedule of items for which unit bid prices are invited. The proposal pamphlet will state the time in which the work must be completed, the type and amount of the proposal guaranty and the date, time and place of the opening of

proposals. The pamphlet will also include any Special Provisions or requirements which vary from or are not included in the Standard Specifications. Additional contract documents applicable to the specific project are listed in the Special Provisions.

All papers bound with or attached to the proposal pamphlet are considered a part thereof and shall not be detached or altered when the proposal is submitted.

The project plans, specifications, Standard Drawings and other documents designated in the proposal pamphlet, will be considered a part of the proposal whether attached or not.

The project plans and proposal pamphlets are available at the price per set indicated in the advertisement for bids.

102.05 Issuance of Proposals:

The Department reserves the right to refuse to issue a proposal pamphlet for any of the following reasons:

- (A) Lack of competency or adequate machinery, plant and other equipment, as revealed by the financial statement and experience questionnaires required under Subsection 102.02.
- (B) Incomplete work which, in the judgment of the Department, might hinder or prevent the prompt completion of additional work if awarded.
- (C) Failure to pay, or settle satisfactorily, all bills due for work on former contracts in force at the time of issuance of a proposal pamphlet.
- (D) Failure to comply with any qualification regulations of the Department.
- (E) Default under previous contracts.
- (F) Unsatisfactory performance on previous work.
- (G) Entering into any contract, combination, conspiracy, or other unlawful act in restraint of trade or commerce.
- (H) Knowingly and willfully falsifying, concealing, or covering up a material fact by trick, scheme, or device.
- (I) Making false, fictitious, or fraudulent statements or representations.
- (J) Making or using a false writing or document knowing it to contain a false, fictitious, or fraudulent statement or entry.
- (K) Misrepresentation or false statement on any application for bonding.
- (L) Misrepresentation or false statement on any application for prequalification.

(M) Lack of sufficient ability or integrity to complete the contract.

102.06 Interpretation of Quantities in Bidding Schedule:

The quantities appearing in the bidding schedule, except as provided elsewhere, are approximate only and are prepared for the comparison of bids. Payment to the contractor will be made only for the actual quantities of work performed and accepted or materials furnished in accordance with the requirements of the contract. The scheduled quantities of work to be done and materials to be furnished may each be increased, decreased or omitted as hereinafter provided in Subsection 104.02.

102.07 Examination of Plans, Specifications and Site of Work:

The bidder shall examine the site of the proposed work and the contract before submitting a Proposal. If no site investigation is performed, the bidder is responsible for all site conditions that should have been discovered had a reasonable site investigation been performed. The submission of a Proposal will be considered conclusive evidence that the bidder is satisfied with the conditions to be encountered in performing the work and as to the requirements of the proposed contract.

A set of plans, earthwork calculations and plotted cross sections and other material, if available, will be on file with Contracts and Specifications, 1651 W. Jackson, Room 121F, Phoenix, for contractors to review in the process of preparing bids for projects containing earthwork. A copy of the calculations and cross-sections may also be purchased for a nominal fee, but must be requested not less than five working days in advance of the bid opening.

The bidder shall take no advantage of any apparent error or omission in the plans, bid schedule items, estimated quantities, specifications, or other contract documents. In the event the bidder discovers such an error or omission, the bidder shall immediately notify the Engineer. The Engineer will then make such corrections and interpretations as may be deemed necessary.

Any request for explanation of the meaning or interpretations of the contract shall be submitted in adequate time to allow a reply to reach all bidders before submission of their Bid Proposal. If the Department determines interpretations or explanations are warranted, the response will be issued as an addendum to the Proposal Form, and will be furnished to all prospective bidders before the time set for opening of Proposals.

The Department will not be bound by any statement or representation concerning conditions or description of the work unless they are included in the contract. Oral explanations, interpretations, or instructions given before the award of the contract by Department employees or agents are not binding.

102.08 Preparation of Proposal:

The bidder shall submit its proposal only upon the forms furnished by the Department or exact facsimiles thereof. No consideration will be given to any purported proposals on other forms, or to any request to modify or change a proposal, regardless of whether such request is submitted orally, by wire, by letter, over the telephone or by other means.

The bidder shall specify a unit price, in figures, for each pay item for which a quantity is given in the Bidding Schedule and shall also show the amount extended, as the product of the quantity given and the unit price indicated for each bid item, in the column provided for that purpose. In the event that more than two decimal places are used in representing a unit price, all digits beyond the second decimal place will be truncated and the extended amount for the affected item(s) and the total bid will be recomputed accordingly. The total amount of the bid shall be obtained by adding the amounts of the several items.

All of the figures shall be in ink or typed. All revisions or corrections to figures on the Bidding Schedule shall be initialed in ink by an authorized officer or agent of the bidder. All signatures required on the proposal form shall be signed in ink.

When an item in the proposal contains a choice to be made by the bidder, the bidder shall indicate a choice in accordance with the specifications for that particular item and thereafter no further choice will be permitted.

An individual bidder shall clearly show his/her name, post office address and signature.

A general partnership bidder shall clearly show the name and post office address of each member of the partnership and the signature of one or more members of the partnership.

A limited partnership bidder shall clearly show the name and post office address of each member of the partnership and the signature of one or more general partners.

A joint venture bidder shall clearly show the name and post office address of each member or officer of the firms and the signature of one or more members or officers of each firm represented by the joint venture.

A corporate bidder shall clearly show the names, titles and business addresses of the president, vice president, secretary and treasurer; the name of the corporation; the state in which the corporation was incorporated; and the signatures of one or more officers of the corporation or by a legally qualified agent of the corporation acceptable to the Department. Evidence of authority of the signing officer(s) to submit a proposal on behalf of the corporation shall either be attached thereto or be on file with the Department. If the corporation is incorporated in any state other than the State of Arizona, the corporation shall submit to the Department, prior to the award of contract, proof from the Arizona Corporation Commission that it has been granted authority to do business in the State of Arizona.

The complete proposal pamphlet shall be submitted and the proposal sheets shall not be separated from the remainder of the pamphlet. Proposal pamphlets are not transferable.

102.09 Non-Collusion Certification:

Each bidder shall complete the Non-Collusion Certificate included with the proposal form. This form shall be executed by or on behalf of the person, firm, association or corporation submitting the bid, certifying under penalty of perjury, that such person, firm, association or corporation has not, either directly or indirectly, entered into any agreement, participated in any collusion or otherwise taken action in restraint of free competitive bidding in connection with the submitted bid.

102.10 Irregular Proposals:

- (A) Proposals may be considered irregular and may be rejected for any of the following reasons:
 - (1) If any of the proposal documents show unauthorized alterations of words or figures.
 - (2) If the proposal contains conditional or uncalled-for alternate bids.
 - (3) If the proposal documents contain unauthorized alterations of words or figures or erasures not initialed by the person or persons signing the proposal or if there is a submission of any kind which may tend to make the proposal incomplete, indefinite or ambiguous as to its meaning.
 - (4) If the bid is mathematically unbalanced.
 - (5) If the bid is materially unbalanced.
 - (6) If the bidder fails to sign the non-collusion affidavit form.
- (B) Proposals will be considered irregular and will be rejected for any of the following reasons:
 - (1) If the proposal, bid bond or bidding schedule is on a form other than that furnished by the Department.
 - (2) If the bidder or surety fails to sign the bid bond, unless a certified or cashier's check is submitted with the proposal.
 - (3) If the bidder fails to sign the proposal.
 - (4) If the bidding schedule does not contain a unit price for each pay item listed except in the case of authorized alternate pay items.
 - (5) If the bidder fails to meet the required goal for Disadvantaged Business Enterprises (DBE) established in the Special Provisions or show good faith effort as determined by the Department.

102.11 Delivery of Proposals:

Each proposal, together with the required proposal guaranty, shall be placed in the special envelope furnished by the Department for this purpose and the envelope shall be sealed. All proposals shall be submitted prior to the time and at the place specified in the advertisement for bids. Proposals received after the time set for opening the bids will be returned to the bidder unopened.

102.12 Proposal Guaranty:

A proposal guaranty in the form of either a certified or a cashier's check made payable to the Arizona Department of Transportation for 10 percent of the amount of the bid or in the form of a surety (bid) bond for 10 percent of the amount of the bid shall accompany the proposal.

The surety (bid) bond will be accepted only on the form provided by the Department. The surety (bid) bond shall be executed solely by a surety company or companies holding a certificate of authority to transact surety business in this State issued by the Director of the Department of Insurance.

Surety (bid) bonds shall be signed by the bidder and by the surety. The surety shall provide a current Power of Attorney attached to the surety bond. The agent for the surety must be licensed to act as an insurance agent in Arizona.

102.13 Withdrawal of Proposals:

A bidder will be permitted to withdraw its proposal unopened after it has been submitted to the Department, provided its request in writing is received by the Department prior to the time specified for the opening of proposals. When proposals for more than one contract are to be publicly read on any one date, the apparent low bidder for a contract may submit a written request to withdraw the bidder's proposal for any subsequent contract immediately prior to the reading of proposals for that contract. A short interval of time will be allowed between the reading of proposals to give the bidder time to submit a withdrawal request. Upon presentation of the written request at the proper time, the bidder's proposal will be returned unopened.

102.14 Combination or Conditional Proposals:

If the Department so elects, proposals may be issued for projects in combination or separately so that bids may be submitted either on the combination or on separate units of combination. The Department reserves the right to make awards on combination bids or separate bids to the best advantage of the Department. No combination bids, other than those specifically set up in the proposal by the Department, will be considered.

Conditional proposals will be considered when so stated in the Special Provisions.

102.15 Public Opening of Proposals:

Proposals will be opened and read aloud at the time and place indicated in the advertisement for bids. Bidders, their authorized agents and other interested parties are invited to be present.

102.16 Licensing:

It is the responsibility of the bidder to determine whether it has the appropriate contracting licenses to perform the work. The Department will make the award, if any, to the lowest responsible bidder who has the proper licenses. For all projects except Federal-aid funded projects, the bidder must have the proper licenses at the time the bid is submitted to the Department. On Federal-aid funded projects, the bidder is not required to have the licenses at the time of bidding, but it must procure the licenses before award can be made, and no later than 60 days after the date bids are opened. Licensing information is available from the Arizona Registrar of Contractors.

SECTION 103 AWARD AND EXECUTION OF CONTRACT:

103.01 Consideration of Proposals:

After the proposals are opened and read aloud, they will be compared on the basis of the summation of the products of the quantities shown in the bidding schedule by the unit bid prices shown. The results of such comparisons will be available to the public.

The right is reserved to reject any or all proposals, to waive technicalities or to advertise for new proposals if, in the judgment of the Department, the best interests of the Department will be promoted thereby.

103.02 Interpretation of Proposals:

The Department will consider the following in interpreting proposals:

- (A) In the event of a discrepancy between unit bid prices and extension, the unit bid price shall govern.
- (B) Unit prices may show up to two decimal places. Decimal places beyond two will be truncated. For example, if the stated unit bid price is \$1.128 per unit, the Department will interpret the unit bid price as \$1.12 per unit. The extended amount for the affected item(s) and the total bid will be computed accordingly.
- (C) The Department will not correct errors in unit bid prices, even if it is demonstrated that the error was a clerical error.

103.03 Responsibility:

The Department will decline to award the contract to any bidder who the Department finds is not a responsible bidder for the particular contract.

A person who has been convicted of a violation of Arizona Revised Statutes Section 34-252 is not eligible to enter into any contract with the Department for a period of up to three years from date of conviction, as determined by the court. A person means any individual, partnership, corporation, association or other entity formed for the purpose of doing business as a contractor.

Non-responsibility may also be found for any of the following reasons:

- (A) Anti-competitive acts;
- (B) Lack of competency and adequate machinery, plant and other equipment, as revealed by the financial statement and experience questionnaires required under Subsection 102.02;
- (C) Incomplete work which, in the judgment of the Department, might hinder or prevent the prompt completion of additional work if awarded;
- (D) Failure to pay or settle satisfactorily, all bills due for labor and material on former contracts in force at the time of issuance of a proposal pamphlet;
- (E) Failure to comply with any qualification regulations of the Department;
- (F) Default under previous contracts;
- (G) Unsatisfactory performance on previous work;
- (H) Knowingly and willfully falsifying, concealing, or covering up a material fact by trick, scheme, or device;
- (I) Making false, fictitious, or fraudulent statements or representations;
- (J) Making or using a false writing or document knowing it to contain a false, fictitious, or fraudulent statement or entry;
- (K) Lack of a proper contractor's license; or
- (L) Lack of sufficient ability or integrity to complete the contract.

103.04 Award of Contract:

The Transportation Board will consider proposals for award within 45 calendar days after the opening of proposals. The Transportation Board reserves the right to postpone action relative to the award of contract until a future Board Meeting. In any case, the Transportation Board will act on proposals no later than 60 calendar days after the opening of proposals. No adjustment in proposed prices will be allowed as a result of any delay caused by the Transportation Board or the Award process.

The award of contract, if awarded, will be made by the Transportation Board to the lowest responsible bidder whose proposal complies with all the requirements prescribed. If there are two or more low responsive bids that are identical in price, award will be made by drawing lots. The successful bidder will be notified by certified letter mailed to the address shown in the bidder's proposal that its bid has been accepted and that it has been awarded the contract.

At any time after completion of the 60-day period set forth above for award of contract, the successful bidder may, by letter, notify the State Engineer of the Department's failure to issue a notice of award letter. If the notice of award letter has not been issued within five days from the date that the successful bidder's letter is received by the State Engineer, the successful bidder shall have the right to withdraw its bid without forfeiture of the bidder's proposal guaranty.

103.05 Cancellation of Award:

The Transportation Board reserves the right to cancel the award of any contract at any time, before the execution of said contract by all parties, without any liability against the Transportation Board or the Department.

103.06 Return of Proposal Guaranty:

Proposal guaranties will be returned immediately following the opening and checking of proposals, except that of the lowest qualified bidder; however, the Department at its discretion, may also retain the proposal guaranty of the second lowest qualified bidder.

Proposal guaranties that have been retained will be returned promptly upon completion of both of the following actions:

Execution of the contract.

The execution and filing with the Department of satisfactory bonds and contract forms.

103.07 Requirement of Contract Bonds:

The successful bidder shall furnish the Department the following surety bonds, which shall become binding upon the execution of the contract:

- (A) A performance bond in the amount of 100 percent of the total contract amount, conditioned upon the faithful performance of the contract in accordance with the plans, specifications and conditions thereof. Such bond shall be solely for the protection of the Department.
- (B) A payment bond in the amount of 100 percent of the total contract amount solely for the protection of claimants supplying labor or materials to the contractor or its subcontractors in the prosecution of the work, and the payment

of all workman's compensation, occupational disease and unemployment compensation premiums.

The bonds shall be written or countersigned by an authorized representative of the surety. The authorized representative must be either a resident of the State of Arizona or must maintain its principal office in this State. The authorized representative for the surety must be licensed to act as an insurance agent in Arizona. Surety bonds shall be signed by the bidder and by the surety. The surety shall provide a current Power of Attorney attached to the surety bond.

The forms of the bonds will be provided by the Department and will conform to Arizona Revised Statute, Sections 34-221 through 34-223. Each bond shall be executed solely by a surety company or companies holding a certificate of authority to transact surety business in this State issued by the Director of the Department of Insurance.

103.08 Execution of Contract:

The contractor shall return the signed contract and bonds so as to be received by the Department no later than 10 calendar days after the date of the notice of award letter.

Contracts and bonds should be addressed as follows:

Arizona Department of Transportation
Contracts and Specifications Services
1651 West Jackson Street, Room 121F
Phoenix, Arizona 85007

The Department will execute the contract within 20 calendar days after the date of the notice of award letter. No contract shall be considered as effective until it has been fully executed by the parties.

103.09 Failure to Execute Contract:

Failure to execute the contract and file satisfactory contract bonds as provided herein within 10 calendar days after the date of the notice of award letter shall be just cause for the cancellation of the award and forfeiture of the proposal guaranty to the Department, not as a penalty, but in liquidation of damages sustained. Award may then be made to the next lowest responsible bidder, or the work may be re-advertised as the Department may decide.

103.10 Bid Disputes:

Any interested party may protest the prospective award of the contract to the apparent lowest responsible bidder, or the refusal of the Department to award the contract to a firm which claims it is the lowest responsible bidder. A protest must be in writing and personally delivered or sent by certified mail, return receipt requested, to the State Engineer. The protest must be received by the State Engineer no later than seven calendar days after the opening of bids, except in the case of a protest concerning compliance with disadvantaged business enterprise provisions. Any protests concerning compliance with disadvantaged

business enterprise provisions must be received by the State Engineer no later than seven calendar days after the date required for submittal of the disadvantaged business enterprise affidavit by the apparent low bidder.

The protest must include facts supporting the protest, any pertinent contractual provisions, law, rules or regulations, and other legal authorities supporting the protest and a requested action. Copies of the protest shall be sent by the protestant to every bidder, at the same time the protest is submitted to the State Engineer.

Any interested party or the Department may submit a response to the protest. The response will include a statement of the requested action, a rebuttal of any of the factual matters in the protest, facts supporting the response, and any contractual provisions, laws, rules, or regulations, or other authority supporting the response.

The response must be received by the State Engineer no later than seven calendar days after the protest is filed.

Statutes, contractual provisions, rules or regulations of the federal government or the state government need not be quoted in full in a protest or response, so long as sufficient citation is given so that the matter cited may be conveniently referenced.

The State Engineer will make a recommendation in writing to the Transportation Board, with copies to the protestant and all parties upon whom service of the protest or response has been made, within seven calendar days after receipt of the response.

The Transportation Board may hear arguments concerning the protest, or at its discretion may direct the State Engineer to hold a hearing or other appropriate procedure to evaluate the protest. If the matter is referred to the State Engineer, the State Engineer's recommendation will be made to the Board within 30 days.

The Transportation Board will make the final decision as to award or the rejection of bids.

Notwithstanding the provisions of Subsection 103.04, in case of any bid protest, the award, if any, must be made by the Transportation Board no later than 75 calendar days after the opening of proposals unless otherwise agreed by the parties.

The times specified in this subsection may be changed by the Engineer with the written agreement of both the apparent low bidder and second low bidder. The times prescribed in this subsection may also be varied in the Special Provisions.

103.11 Escrow of Bid Documentation:

When required by the Special Provisions, each bidder shall submit its Bid Documentation in a separate envelope from the Bid. The Bid Documents will remain unopened during the bid opening period. The documentation of the successful bidder will be placed in escrow with a banking institution or other bonded document storage facility and preserved by that institution or facility as specified in the following subsections. The Bid Documentation for all unsuccessful bidders will be returned.

(A) Submittal of Bid Documentation:

The bidder shall submit the Bid Documentation in a sealed container. The container shall be clearly marked "Bid Documentation" and show on the face of the container the bidder's name and address, the date of submittal, the project number, and the contract number.

(B) Affidavit:

In addition to the Bid Documentation, the bidder shall submit an affidavit, signed under oath by a representative of the bidder authorized to execute Bid Proposals, listing each bid document submitted by author, date, nature, and subject matter. The affidavit shall attest 1) that the affiant has personally examined the Bid Documentation, 2) that the affidavit lists all of the documents relied upon by the bidder in preparing the bid for the project, and 3) that all Bid Documentation is included in the sealed container submitted in escrow.

(C) Duration and Use:

Within three days of award of the contract, the Department and the contractor will jointly deliver the sealed container and affidavit to a banking institution or other bonded document storage facility selected by the Department for placement in a safety deposit box, vault or other secure accommodation.

The document depository agreement shall reflect that the Bid Documentation and affidavit shall remain in escrow during the life of the contract or until the contractor requests that the Department verify a request for additional compensation or an extension of time based on its bid or unless a court order provides the Department permission to obtain the Bid Documentation. In the absence of such action and provided the contractor signs the final Standard Release Form, the Department will instruct the document depository to release the sealed container to the contractor.

In accordance with the contractor's representation that the sealed container placed in escrow contains all of the materials relied upon in preparing its bid, the contractor agrees to waive the right to use any Bid Documentation other than that placed in escrow in disputes arising out of the contract.

(D) Format and Contents:

Bidders may submit Bid Documents for escrow in the usual cost estimating format. It is not the intention of this specification to cause the bidder extra work during the preparation of the proposal, but to ensure that the Escrow Bid Documents will be adequate to enable complete understanding and proper interpretation for their intended use. The Bid Documents shall be written in the English language.

It is required that the Bid Documents clearly itemize the estimated costs of performing the work of each bid item contained in the bid schedule. Bid items are to be separated into sub-items as required to present a completed and detailed cost estimate and allow a detailed cost review. The Bid Documents shall include all quantity take-offs, crew,

equipment, calculations of rates of production and progress, copies of quotations from subcontractors and suppliers, and memoranda, narratives, consultant's reports, add/deduct sheets, and all other information included by the bidder to arrive at the prices contained in the bid proposal. Estimated costs shall be broken down into the bidder's usual estimate categories such as direct labor, repair labor, equipment operation, equipment ownership, expendable materials, permanent materials, and subcontract cost as appropriate. Plant and equipment and indirect costs are to be detailed in the bidder's usual format. The contractor's allocation of plant and equipment, indirect costs, contingencies, markup and other items to each bid item shall be included.

All costs shall be identified. For bid items amounting to less than \$10,000, estimated unit costs are acceptable without a detailed costs estimate, providing that labor, equipment, materials, and subcontracts, as applicable, are included and provided that indirect costs, contingencies, and markups, as applicable, are allocated.

If the Bid Documents were developed using computer generated software, the contractor shall provide the documents in hard copy and shall identify the name and version of the computer software used.

Bid documents provided by the Department need not be included in the Bid Documents for escrow unless needed to comply with the requirements of this subsection.

(E) Refusal or Failure to Provide Bid Documentation:

Failure to provide Bid Documentation shall render the bid non-responsive.

(F) Confidentiality of Bid Documentation:

The Bid Documentation and affidavit in escrow are, and shall remain, the property of the contractor. The Department has no interest in, or right to, the Bid Documentation unless the contractor requests that the Department verify its request for additional compensation or an extension of time based on its bid or unless a court order gives the Department permission to obtain the Bid Documentation. In the event of such requests or court orders, the Bid Documentation and affidavit will become the property of the Department until complete resolution of the reason for the request or court order is achieved. These materials, and all copies made by the Department, will be returned to the contractor at the conclusion of litigation, or final resolution of all outstanding claims, upon execution of a final release. The Department will make every reasonable effort to ensure that the Bid Documentation remains confidential within the Department except that said documents may be used in court, arbitration or other dispute resolution proceedings. Otherwise, said documents will not be made available to anyone outside the Department.

(G) Cost and Escrow Instructions:

The cost of the escrow documentation depository storage facility will be borne by the Department. The Department will provide escrow instructions to the document depository consistent with this subsection.

(H) Payment:

There will be no separate payment for compilation of the data, providing the container or the cost of verification of the Bid Documentation. All costs shall be included in the overall contract bid price.

SECTION 104 SCOPE OF WORK:

104.01 Intent of Contract:

The intent of the contract is to provide for the construction and completion of the work to the satisfaction of the Department. The contractor shall furnish experienced supervision and labor, and all materials, equipment, tools, transportation and supplies required to complete the work in accordance with the plans, specifications and terms of the contract.

(A) Covenant of Good Faith and Fair Dealing:

This contract imposes an obligation of good faith and fair dealing in its performance and enforcement.

The contractor and the Department, with a positive commitment to honesty and integrity, agree to the following mutual duties:

- (1) Each will function within the laws and statutes applicable to their duties and responsibilities.
- (2) Each will avoid hindering the other's performance.
- (3) Each will proceed to fulfill its obligations diligently.
- (4) Each will cooperate in the common endeavor of the contract.

(B) Partnering:

The Department encourages the foundation of a cohesive partnering with the contractor and its principal subcontractors and suppliers. This partnering is not a legal partnership as defined by Arizona law. Partnering will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives are effective and efficient contract performance and completion within budget, on schedule, and in accordance with the contract.

The establishment of a partnering charter on a project will not change the legal relationship of the parties to the contract nor relieve either party from any of the terms of the contract.

Any cost associated with effectuating partnering will be agreed to by the Department and the contractor and will be shared equally between them.

To implement this partnering initiative prior to starting of work in accordance with the requirements of Subsection 108.02 and prior to the preconstruction conference, the contractor's management personnel and the District Engineer will initiate a partnering development seminar/team building workshop. The Department and the contractor will make arrangements to determine attendees at the workshop, the agenda of the workshop, its duration, and its location. Persons required to be in attendance will be the Department's Construction Supervisor and key project personnel; the contractor's on-site project manager and key project supervision personnel of both the prime and principal subcontractors and suppliers. The project design engineers, FHWA and key local government personnel will also be invited to attend as necessary. The contractors and the Department will also be required to have Regional/District and Corporate/State level managers on the project team.

Follow-up workshops may be held periodically throughout the duration of the contract as agreed by the contractor and the Department.

104.02 Revisions to the Contract:

The Department reserves the right to revise the contract at any time. Such revisions shall neither invalidate the contract nor release the surety. The contractor agrees to complete the contract as revised. The contractor shall not proceed with work for which a revision to the contract is required without prior approval from the Engineer. Once approval is received, the contractor shall proceed with such direction immediately, whether the Engineer considers that the contract has been revised or not.

It is the contractor's obligation to notify the Engineer in writing that a revision to the contract is necessary and provide such notification in accordance with Subsection 104.03. Whenever the words notice, notification, request or notify are used in this subsection, such notice or request shall be provided in accordance with the requirements of Subsection 104.03.

The contract may only be revised by Supplemental Agreement. Supplemental Agreements will be issued for the following reasons only:

- (A) To accomplish extra work as defined in Subsection 101.33.
- (B) If a differing site condition is encountered as described below:
 - (1) During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the contract or if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the contract, are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the site is disturbed and before the affected work is performed.
 - (2) Upon written notification, the Engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an

increase or decrease in the cost or time required for the performance of any work under the contract, an adjustment, excluding anticipated profits, will be made and the contract modified in writing accordingly. The Engineer will notify the contractor of the determination whether or not an adjustment of the contract is warranted.

- (3) No contract adjustment which results in a benefit to the contractor will be allowed unless the contractor has provided the required written notice.
- (4) No contract adjustment will be allowed under this section for any effects caused on unchanged work.

(C) If the work is suspended by order of the Engineer as provided below:

- (1) If the performance of all or any portion of the work is suspended or delayed by the Engineer in writing for an unreasonable period of time (not originally anticipated, customary, or inherent to the construction industry) and the contractor believes that additional compensation and/or contract time is due as a result of such suspension or delay, the contractor shall submit to the Engineer, in writing, a request for adjustment within seven calendar days of receipt of the notice to resume work. The request shall set forth the reasons and support for such adjustment.
- (2) Upon receipt, the Engineer will evaluate the contractor's request. If the Engineer agrees that the cost and/or time required for the performance of the contract has increased as a result of such suspension and the suspension was caused by conditions beyond the control of and not the fault of the contractor, its suppliers, or subcontractors at any approved tier, and not caused by weather, the Engineer will make an adjustment (excluding profit) and modify the contract in writing accordingly. The contractor will be notified of the Engineer's determination whether or not an adjustment of the contract is warranted.
- (3) No contract adjustment will be allowed unless the contractor has submitted the request for adjustment within the time prescribed.
- (4) No contract adjustment will be allowed under this clause to the extent that performance would have been suspended or delayed by any other cause, or for which an adjustment is provided or excluded under any other term or condition of this contract.

(D) If there are significant changes in the character of work as provided below:

- (1) The Engineer reserves the right to make, in writing, at any time during the work, such changes in quantities and such alterations in the work as are necessary to satisfactorily complete the project.

Changes in quantities and alterations shall not invalidate the contract nor release the surety. The contractor agrees to perform the work as altered.

- (2) If the alterations or changes in quantities significantly change the character of the work under the contract, whether such alterations or changes are in themselves significant changes to the character of the work or, by affecting other work, cause such other work to become significantly different in character, an adjustment, excluding anticipated profit, will be made to the contract. The basis for the adjustment shall be agreed upon prior to the performance of the work. If a basis cannot be agreed upon, then an adjustment will be made either for or against the contractor in such amount as the Engineer may determine to be fair and equitable.
- (3) If the alterations or changes in quantities do not significantly change the character of the work to be performed under the contract, the altered work will be paid for as provided in the contract.
- (4) The term "significant change" shall be construed to apply only to the following circumstances:
 - (a) When the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction; or
 - (b) When a major item of work, as defined elsewhere in the contract, is increased in excess of 125 percent or decreased below 75 percent of the original contract quantity. Any adjusted unit price for an increase in quantity shall apply only to that portion in excess of 125 percent of original contract item quantity. Any adjustment in contract unit price for a decrease in quantity below 75 percent shall apply only to the actual amount of work performed, except that the product of the adjusted unit price and the reduced quantity of work performed shall in no case exceed the product of the original contract unit price and 75 percent of the Bid Schedule quantity.

(E) To revise the contract time in accordance with Subsection 108.08.

If the Supplemental Agreement is to provide for an increase or decrease in the contract price or time, such increases or decreases will be determined in accordance with Subsections 108.08 and 109.04.

104.03 Notification:

- (A) As required by these specifications or any time the contractor believes that the action of the Department, lack of action by the Department, or for some other reason will result in or necessitate the revision of the contract, the Engineer must be notified immediately. If within two working days the identified issue has

not been resolved between the Department and the contractor, the contractor shall provide a written notice. At a minimum the written notice shall provide a description of the nature of the issue, the time and date the problem was discovered, and if appropriate, the location of the issue. After initial written notice has been provided, the Engineer will proceed in accordance with Subsection 104.02. In addition to proceeding in accordance with Subsection 104.02, the Department and the contractor must make every effort to resolve the issue identified in the initial notice through the partnering process. Only if the issue cannot be quickly resolved by the partnering process will it be necessary for the contractor to proceed to the next step in this subsection.

- (B) Once the partnering issue resolution process has been exhausted or within seven calendar days of the date of the initial written notice, whichever is sooner, the contractor shall provide in writing the following information to the Engineer:
- (1) The date of occurrence and the nature and circumstances of the issue for which initial notice was given.
 - (2) Name, title, and activity of each Department representative knowledgeable of the issue.
 - (3) Identity of any documents and the substance of any oral communication related to the issue.
 - (4) Basis for an assertion that work required is a change from the original contract work or schedule.
 - (5) Identity of particular elements of contract performance for which additional compensation may be sought, including:
 - (a) Pay item(s) that has been or may be affected by the issue;
 - (b) Labor or materials, or both, that will be added, deleted or wasted by the problem and what equipment will be idled or required;
 - (c) Delay and disruption in the manner and sequence of performance that has been or will be caused;
 - (d) Adjustments to contract price(s), delivery schedule(s), staging, and contract time estimated due to the issue; and
 - (e) Estimate of the time within which the Department must respond to the notice to minimize cost, delay, or disruption of issue.
 - (6) The contractor's written certification, under oath, attesting to the following:
 - (a) The request is made in good faith.

- (b) Supportive data is accurate and complete to the contractor's best knowledge and belief.
- (c) The amount requested accurately reflects the contractor's actual cost incurred.

In complying with this request, the contractor shall use the Department's certification form.

- (C) The failure of the contractor to comply with the requirements of this subsection constitutes a waiver of entitlement to additional compensation or a time extension.
- (D) Within 10 calendar days after the contractor's submission in accordance with subparagraph (B), the Engineer will respond in writing to the contractor to:
 - (1) Confirm that a supplemental agreement is necessary and, when necessary, give appropriate direction for further performance, or
 - (2) Deny that the contract has been revised and, when necessary, direct the contractor to proceed with the contract work, or
 - (3) Advise the contractor that adequate information has not been submitted to decide whether (1) or (2) applies, and indicate the needed information and date it is to be received by the Engineer for further review. The Department will respond to such additional information within 10 calendar days of receipt from the contractor.

104.04 Maintenance of Traffic:

Unless otherwise provided, the road, while being improved, shall be kept open to all traffic by the contractor. When requested by the contractor and approved by the Engineer, the contractor may bypass traffic over an approved detour route. Regardless of whether it is through or local traffic, the contractor shall keep the portion of the project being used by traffic in such condition that traffic will be adequately accommodated. The contractor shall assume maintenance responsibility through the project at the time its operations begin using the highway or interrupt normal traffic operations. The contractor shall also provide and maintain in a safe condition temporary approaches or crossings and intersections with trails, roads, streets, businesses, parking lots, residences, garages and farms, but the contractor will not be required to remove snow.

Before any detour is opened to traffic, the Engineer shall have been satisfied that traffic is able to proceed in a safe manner.

(A) Detours:

When the contract provides for the construction of detours, such detours, including any temporary drainage structures, base and surfacing materials and accessory features, shall be constructed to the lines and grades established.

When the use of detours is no longer required, any temporary structures and accessory features shall be removed and disposed of and the detour roadways shall be removed and the ground shall be restored, as nearly as practicable, to the condition existing prior to the construction of the detour.

Payment for the construction of detours, their maintenance and their removal will be as specified in the Special Provisions.

(B) Maintenance of Traffic During Suspension of Work For the Winter Season:

It is the responsibility of the contractor to request a suspension of the construction work for the winter season. The request shall be in writing. Prior to or during any suspension of the construction work for the winter season, the contractor shall make passable, place in a maintainable condition and shall open to traffic such portions of the project and temporary roadways or portions thereof as may be agreed upon between the contractor and the Engineer for the temporary accommodation of traffic during the anticipated period of suspension. Thereafter, and until an order has been issued for the resumption of construction, the maintenance of the temporary route or line of travel agreed upon and all signs will be by and at the expense of the Department. When construction is resumed, the contractor shall replace or renew any work or materials lost or damaged because of such temporary use; shall remove to the extent ordered any work or materials necessary for the temporary maintenance by the Department and shall complete the work in every respect as though its prosecution has been continuous and without interferences. Such work and any additional work caused by such suspension, for reasons beyond the control of the contractor, will be paid for under the respective pay items or in accordance with the requirements of Subsection 109.04.

(C) Maintenance Directed by the Engineer:

The Engineer may determine that work is required to insure the safety of the traveling public through the project site. If the Engineer orders maintenance for the benefit of the traveling public, the contractor will be paid for such maintenance under the respective pay items or in accordance with the requirements of Subsection 104.02. Work considered under this specification includes, but is not limited to, sweeping, roadway and subgrade repair, safety feature repair, debris removal, repair of pedestrian features and other work necessary to provide a smooth and safe traveled way. This work will be only that accomplished on portions of the roadway being used by the traveling public prior to construction improvements or after acceptance of a completed portion of the work. However, the contractor shall repair any damage caused by its operations at no additional cost to the Department.

104.05 Rights in and Use of Materials Found on the Work:

The contractor, with the approval of the Engineer, may use on the project such stone, gravel, sand or other material determined suitable by the Engineer, as may be found in the excavation. The contractor will be paid both for the excavation of such materials at the corresponding contract unit price and for the pay item for which the excavated material is used. The contractor shall replace all of that portion of the excavation material so removed and used which was needed for use in the embankments, backfills, approaches, etc., with material acceptable to the Engineer at no additional cost to the Department. No charge for the materials so used will be made against the contractor. The contractor shall not excavate or remove any material from within the highway location which is not within the grading limits, as indicated by the slope and grade lines, without written authorization from the Engineer.

Unless otherwise provided, the material from any existing structure may be used temporarily by the contractor in the erection of the new structure. Such material shall not be cut or otherwise damaged except with the approval of the Engineer.

104.06 Restoration of Surfaces Opened by Permit:

The right to construct or reconstruct any utility service in the highway or street or to grant permits for same, at any time, is hereby expressly reserved by the Department for the proper authorities of the municipality in which the work is done.

Any individual, firm or corporation wishing to make an opening in the highway shall secure a permit from the Department. The contractor shall allow parties bearing such permits, and only those parties, to make openings in the highway. When ordered by the Engineer, the contractor shall make, in an acceptable manner, all necessary repairs due to such openings and such necessary work will be paid for as extra work or as provided in these specifications, and will be subject to the same conditions as original work performed.

104.07 Railway-Highway Provisions:

If the contractor elects to use crossings other than those shown on the project plans or described in the Special Provisions, the contractor shall make arrangements for the use of such crossings.

All work to be performed by the contractor within the railroad right-of-way shall be performed at such times and in such a manner as not to interfere unnecessarily with the movement of trains or traffic upon the track of the railway company. The contractor shall use all care and precaution in order to avoid accidents, damage or unnecessary delay or interference with the railway company's trains or other property.

104.08 Prevention of Air and Noise Pollution:

The contractor shall control, reduce, remove or prevent air pollution in all its forms, including air contaminants, in the performance of the contractor's work.

The contractor shall comply with the applicable requirements of Arizona Revised Statutes Section 49-401 et seq. (Air Quality) and with the Arizona Administrative Code, Title 18, Chapter 2 (Air Pollution Control).

The contractor shall comply with all local sound control and noise level rules, regulations and ordinances which apply to any work performed pursuant to the contract.

Each internal combustion engine used for any purpose on the work or related to the work shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the work without its muffler being in good working condition.

104.09 Prevention of Landscape Defacement; Protection of Streams, Lakes and Reservoirs:

The contractor shall give special attention to the effect of its operations upon the landscape and shall take special care to maintain natural surroundings undamaged.

The contractor shall take sufficient precautions, considering various conditions, to prevent pollution of streams, lakes, and reservoirs with fuels, oil, bitumens, calcium chloride, fresh Portland cement, fresh Portland cement concrete, raw sewage, muddy water, chemicals or other harmful materials. None of these materials shall be discharged into any channels leading to such streams, lakes or reservoirs.

Where the contractor's working area encroaches on a running or an intermittent stream, barriers shall be constructed and maintained between the working areas and the stream or stream bed adequate to prevent the discharge of any contaminants into the stream or stream bed.

Frequent fording of running streams with construction equipment will not be permitted; therefore, temporary bridges or other structures shall be used whenever an appreciable number of crossings is necessary.

Unless approved in writing by the Engineer, mechanical equipment shall not be operated in running streams.

Streams, lakes and reservoirs shall be promptly cleared of all falsework, piling, debris or other obstructions placed thereby or resulting from construction operations.

At the time of the preconstruction conference, the contractor shall submit, for the Engineer's approval, a program which includes all the measures which the contractor proposes to take for the construction of permanent erosion control work specified in the contract and all the temporary control measures to prevent erosion and pollution of streams, lakes and reservoirs.

Permanent erosion control work and pollution prevention measures shall be performed at the earliest practicable time consistent with good construction practices. Temporary work

and measures are not meant to be performed in lieu of permanent work specified in the contract.

Construction of drainage facilities as well as the performance of other contract work which will contribute to the control of erosion and sedimentation shall be carried out in conjunction with earthwork operations or as soon thereafter as possible.

Except for that approved in writing by the Engineer, the contractor shall perform no clearing and grubbing or earthwork until the contractor's program has been approved.

If in the opinion of the Engineer, clearing and grubbing, excavation, or other construction operations are likely to create an erosion problem because of the exposure of erodible earth material, the Engineer may limit the surface area to be disturbed until satisfactory control measures have been accomplished. Unless otherwise permitted by the Engineer, the contractor shall not expose an area of erodible earth material greater than 750,000 square feet at any one location.

The Engineer may order the contractor to provide immediate measures to control erosion and prevent pollution. Such measures may involve the construction of temporary berms, dikes, dams, sediment basins and slope drains; the use of temporary mulches, mats and seeds and the use of other devices, methods, items, etc., as necessary.

At any time the contractor proposes to change its schedule of operations, the contractor shall review and update its erosion and pollution control program and submit it to the Engineer for approval.

The contractor shall not be entitled to additional compensation or an extension of contract time for any delays to the work because of the contractor's failure to submit an acceptable erosion and pollution control program.

Erosion control and pollution prevention work specified in the contract which is to be accomplished under any of the various contract items will be paid for as specified under those items.

The cost of any erosion control and pollution prevention work which may be proposed by the contractor in its program, in addition to that specified in the contract, will be considered as included in the prices bid for contract items.

104.10 Contractor's Responsibility for Work:

The contractor shall develop a stormwater management plan for submission to the Engineer outlining the procedures the contractor proposes to use in the control and disposal of storm water that falls on or flows into the work site. The plan shall include measures to prevent damage to surrounding properties. The contractor shall submit the plan within 15 calendar days after the preconstruction conference.

Until final written acceptance of the project by the Engineer, the contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any

part thereof by the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The contractor shall rebuild, repair, restore and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work as specified in Subsection 104.11.

Except as specifically provided under Subsection 104.04(B), in case of suspension of work from any cause whatever, the contractor shall be responsible for the project and shall take such precautions as may be necessary to prevent damage to the project, provide for normal drainage and shall erect any necessary temporary structures, signs or other facilities at no additional cost to the Department. During such period of suspension of work, the contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established plantings, seedings and soddings, furnished under its contract and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

104.11 Damage by Storm, Flood or Earthquake:

Attention is directed to Subsection 104.10, Contractor's Responsibility for Work. In the event damage to the work is caused by a storm, flood, or earthquake which constitutes an "Occurrence," as hereinafter defined, the provisions of this subsection shall be applicable and the contractor may apply in writing to the Engineer for the State to pay or participate in the cost of repairing damage to the work from such cause or, in lieu thereof, and at the sole discretion of the Department, terminate the contract and relieve the contractor of further obligation to perform the work, subject to the following:

(A) Occurrence:

"Occurrence" shall include:

- (1) tornadoes;
- (2) earthquakes in excess of a magnitude of 3.5 on the Richter Scale at the project site;
- (3) storms and floods for which the Governor has proclaimed a state of emergency, when the damaged work is located within the territorial limits to which such proclamation is applicable; or
- (4) events which constitute catastrophic, unusual, sudden, and unforeseeable manifestation of the forces of nature, the effect of which could not have been prevented or minimized by reasonable human foresight and effort.

(B) Application by Contractor:

The contractor shall immediately begin performing emergency work necessary to provide for the safety and passage of public traffic, and such other emergency work necessary to mitigate damages to the facilities. The contractor's written request for the State to pay or to

participate in the cost of rebuilding, repairing, restoring or otherwise remedying the damage to the work caused by the occurrence shall be submitted to the Engineer. The repair work may begin prior to authorization by the Engineer, but the contractor shall keep accurate cost records of all such work performed.

(C) Repair Work:

Repair of damaged work under the provisions of this subsection shall be pursuant to a supplemental agreement specifying the repair work to be performed on the damaged facility. Repair work shall consist of restoring the in-place construction (for the purposes of this subsection erected falsework and formwork shall be considered in-place construction) to the same state of completion to which such work had advanced prior to the Occurrence. Emergency work which the Engineer determines would have been part of the repair work if it had not previously been performed, will be considered to be part of said repair work. The Department reserves the right to make changes in the plans and specifications applicable to the portions of the work to be repaired, and if such changes will increase the cost of repairing the damage over the Engineer's estimate of the cost of repair without the changes, the contractor will be paid for such increased costs in accordance with Subsection 104.11(E).

Nothing in this subsection shall be construed to relieve the contractor of full responsibility for the risk or injury, loss or damage to materials not yet incorporated in the work and to materials, tools, and equipment (except erected falsework and formwork) used to perform the work, nor to relieve the contractor of its responsibility under Subsection 107.13, Responsibility for Damage Claims. The Department will only be responsible for any portion of the work accepted by the Engineer in accordance with Subsection 105.20.

(D) Idled Equipment and Remobilization:

Unless otherwise agreed between the Engineer and the contractor, the cost of the work performed pursuant to this subsection will be determined in accordance with the provisions of Subsection 109.04, "Adjustments in the Contract Price." The cost of documented direct project costs including idled equipment at stand-by rates, remobilization costs, and direct project office overhead shall be included in the cost of emergency work. The contractor and Engineer will agree on equipment which is idle, inaccessible, unusable, or cannot be relocated to other projects. No profit or overhead will be paid for work covered by this paragraph.

(E) Payment for Repair Work:

The State will pay the cost of the repair work as determined in Subsection 109.04.

(F) Termination of Contract:

If the Department elects to terminate the contract, the termination and the determination of the total compensation payable to the contractor shall be governed by the provisions of Subsection 108.11, "Termination of Contract for Convenience of the Department."

104.12 Environmental Analysis:

The contractor shall prepare an environmental analysis for approval by the Engineer, under the following conditions:

- (A) If the contractor elects to provide material from a contractor-furnished source,
- (B) If the contractor elects to utilize any site, to set up a plant for the crushing and processing of base and surfacing materials, or processing base, surfacing, or concrete materials which is not located on a site furnished by the Department or the site of a commercial operation, or
- (C) If the contractor requests that the Engineer approve access to a controlled access highway at points other than legally established access points.

The contractor shall promptly advise the Engineer that it is preparing the analysis and shall submit it upon completion. The contractor should anticipate needing a minimum of 30 days to coordinate with the necessary jurisdictions or agencies and to prepare the analysis. The analysis will be reviewed by the Department and the contractor will be advised whether or not the analysis is acceptable as soon as the necessary determinations have been made. The contractor shall allow 14 days for the Department's review.

If the preparation, and approval of the environmental analysis causes a delay to a controlling activity of the project, the contractor may seek, and the Engineer may grant, an extension of time for the preparation of the analysis in accordance with the terms of Subsection 108.08. The time extension shall not exceed 30 working days.

An environmental analysis shall address itself to all environmental effects, including, but not limited to, the following:

- (A) The location of the proposed source and haul road and the distance from the source to either an existing highway or an established alignment of a proposed Federal, State or County highway along with vicinity maps, sketches or aerial photographs.
- (B) The ownership of the land.
- (C) The identity and location of nearby lakes, streams, parks, wildlife refuges or other similar protected areas.
- (D) The former use, if known, of the source and haul road and their existing condition.
- (E) The identification of present and planned future land use, zoning, etc., and an analysis of the compatibility of the removal of materials with such use.
- (F) The anticipated volume of material to be removed; the width, length and depth of the excavation; the length and width of the haul road and other pertinent

features and the final condition in which the excavated area and haul road will be left, such as sloped sides, topsoil replaced, the area seeded, etc.

- (G) The archaeological survey of the proposed source prepared by a person with acknowledged credentials, which credentials shall be attached to the survey. The survey shall be prepared in a State Historic Preservation Office standardized format. The survey shall identify cultural resources within the potential impact area of the materials source processing area, and haul road. Additionally the survey report shall identify historic or archaeological sites in the vicinity.
- (H) If the proposed source and haul road will utilize Prime and Unique Farm land or farm land of statewide importance, a description of such remaining land in the vicinity and an evaluation whether such use will precipitate a land use change.
- (I) A description of the visual surroundings and the impact of the removal of materials on the visual setting.
- (J) The effect and mitigation of such effects on access, public facilities and adjacent properties.
- (K) The relocation of business or residences.
- (L) Procedures to minimize dust in pits and on haul roads and to mitigate the effects of such dust.
- (M) A description of noise receptors and procedures to minimize impacts on these receptors.
- (N) A description of the impact on the quality and quantity of water resulting from the materials operation shall be provided. The potential to introduce pollutants or turbidity to live streams and/or nearby water bodies shall be addressed. Measures to mitigate potential water quality impacts shall be coordinated through the Arizona Department of Environmental Quality.
- (O) A description of the impact on endangered or threatened wildlife and plants and their habitat. The analysis of potential impact to plants and wildlife shall be coordinated through the Arizona Game and Fish Department and US Fish and Wildlife Service. Compliance with the Arizona Native Plant Law shall be coordinated through the Arizona Commission of Agriculture and Horticulture.
- (P) A discussion of the effects of hauling activities upon local traffic and mitigating measures planned where problems are expected.
- (Q) A description of the permits required, such as zoning, health, mining, land use, flood plains (see Section 404 of the Clean Water Act), etc.

- (R) The effect of removing material and/or stockpiling material on stream flow conditions and the potential for adverse impacts on existing or proposed improvements within the flood plain which could result from these activities.

Guidance in preparing the environmental analysis is available from ADOT's Environmental Planning Section, 205 South 17th Avenue, Room 240E, Phoenix, AZ 85007, phone (602) 712-7767.

104.13 Value Engineering Proposals by the Contractor:

Proposals may be submitted to the Engineer for modifying the plans, specifications, or other requirements of the contract for the sole purpose of reducing the total costs of construction without impairing in any manner the essential functions or characteristics of the project, including service life, economy of operations, ease of maintenance, benefits to the traveling public, desired appearance or design and safety standards.

After execution of the contract, an initiative may be recommended by the contractor. The initiative must be identified as a Value Engineering Proposal (VEP), and may include modifications to the plans or specifications, construction phasing or procedures, or other contract requirements.

Any cost savings generated to the contract as a result of VEP offered by the contractor and approved by the Department will be shared equally between the contractor and the Department as specified in Subsection 104.13(D).

Bid prices are not to be based on the anticipated approval of a VEP. If a VEP is rejected, the contract shall be completed in accordance with the original terms of the contract or as otherwise modified.

Any decision whether to approve or accept a VEP shall be within the sole discretion of the Department. The Department will bear no liability for any delay in considering a VEP, the refusal to accept or approve such a proposal, or any other matter connected with a VEP.

(A) Submittal and Review of VEP Concept or Idea:

- (1) The contractor shall initially submit a brief letter proposal with graphics to the Department to illustrate the concept or idea. The contractor shall indicate whether adequate time is available in its schedule for formal submittal and review prior to VEP implementation.
- (2) The Department will review the concept or idea and within 10 days of the contractor's initial submittal and inform the contractor in writing whether the concept or idea has merit and should be submitted as a formal VEP.
- (3) If the Department determines that the time for response indicated in the contractor's letter proposal is insufficient for review, the Department may choose to evaluate the need for a noncompensable time extension to the contract. Its evaluation will be based on the additional time needed by the

Department for its review and the effect on the contractor's schedule occasioned by the added time. The need for such a time extension will be evaluated in accordance with Subsection 108.08

(B) Formal Submittal of the VEP:

Within 30 days after the Department has determined the VEP concept or idea has merit, the contractor shall formally submit a proposal. The proposal shall include sufficient data for the Department to make an informed decision regarding the proposal and shall include, at a minimum, the following information:

- (1) A statement that the Proposal is submitted as a VEP.
- (2) A description of the difference between the existing contract and the proposed change and the advantages and disadvantages of each, including effects on service life, economy of operations, ease of maintenance, benefits to the traveling public, desired appearance, and safety.
- (3) A complete set of plans and specifications showing the proposed revisions relative to the original contract features and requirements supported by design computations as necessary for a thorough and expeditious evaluation.
- (4) A complete analysis indicating the final estimated costs and quantities to be replaced by the VEP compared to the new costs and quantities generated by the VEP.
- (5) A statement specifying the date by which a Supplemental Agreement adopting the VEP must be executed to obtain the maximum cost reduction.
- (6) A statement detailing the effect the VEP will have on the time for completing the contract.
- (7) A description of any previous use or testing of the VEP and the conditions and results. If the VEP was previously submitted on another Department project, indicate the date, contract number, and the action taken by the Department.
- (8) A detailed statement indicating the costs for developing the changes, along with the costs for preparing the value engineering joint proposal.

(C) Conditions:

Value Engineering Proposals will be considered only when all of the following conditions are met:

- (1) A VEP, approved or not approved by the Department, applies only to the contract on which it is submitted. A submitted VEP becomes the property of the Department. The VEP shall contain no restrictions imposed by the contractor on its use or disclosure. The Department has the right to use, duplicate and disclose in whole or in part any data necessary for the utilization of the Proposal. The Department retains the right to use any accepted VEP or part thereof on other projects without obligation to the contractor. This provision is not intended to deny rights provided by law with respect to patented materials or processes.
- (2) If the Department is already considering certain revisions to the contract or has considered or approved changes in the contract of a like nature on other contracts which are subsequently incorporated in a VEP, the Department may reject the VEP and may change the contract without obligation to the contractor.
- (3) The contractor shall have no claim for additional costs or delays resulting from the rejection of a VEP, including development costs, loss of anticipated profits, increased material or labor costs except as allowed in Subsection 104.13(D).
- (4) The Department will determine if a VEP qualifies for consideration and evaluation. It may reject any VEP that requires excessive time or costs for review, evaluation or investigation, or that is not consistent with the Department's design policies and criteria for the project.
- (5) The Engineer will reject all or any portion of work performed under an approved VEP if unsatisfactory results are obtained. The Engineer will direct the removal of rejected work and require construction to proceed under the original contract requirements without reimbursement for rejected work performed under the VEP, or for its removal. Where modifications to the VEP are approved to adjust to field or other conditions, reimbursement will be limited to the total amount payable for the work at the contract bid prices as if it were constructed under the original contract requirements. The rejection or limitation of reimbursement shall not constitute the basis of any claim against the Department for delay or for other costs.
- (6) The proposed work shall not contain experimental features but shall contain features that have been used under similar or acceptable conditions on other projects or locations acceptable to the Department.
- (7) VEPs will not be considered if equivalent options are already provided in the contract.
- (8) The savings generated by the VEP must be sufficient to warrant a review and processing. A savings resulting solely from the elimination or reduction in quantity of a single bid item will not be considered as a VEP.

A savings resulting from the elimination or reduction in quantity of a bid item specified as part of a VEP will be considered.

- (9) A VEP changing the type of the pavement structure or the type or basic design of a bridge structure will not be considered. Changes in the pavement structural section or in structure design details may be considered with prior approval by the Materials or State Bridge Engineer. Changes to contingency items such as traffic control and dust palliative will not be considered if they are part of pre-determined lump sum contract amounts. Contingency items such as traffic control and dust palliative may be considered when they are reduced as part of a VEP to change scope, method or procedure, provided they are specified as individual contract bid items.
- (10) Additional information needed to evaluate VEPs shall be provided in a timely manner. Untimely submittals of additional information will result in rejection of the VEP. Where design changes are proposed, the additional information could include results of field investigations and surveys, design computations, and field change sheets.
- (11) The contractor may submit VEPs for an approved subcontractor. Reimbursement will be made to the contractor. Subcontractors may not submit a VEP except through the contractor.
- (12) The contractor shall ensure the VEP is sealed by a Registered Engineer.

(D) Acceptance, Rejection and Payment:

Within 30 days of the contractor's formal submission of the VEP, the Department will accept or reject the VEP.

- (1) The contractor will be notified in writing by the Engineer as to whether the proposal has been accepted. The decision by the Department is final and shall not be subject to the provisions of Subsection 105.21.
- (2) If the VEP is rejected, the Department will share equally in the contractor's costs for developing and presenting the proposal, and the contractor will share equally in the cost to the Department for investigating and evaluating the proposal. A supplemental agreement will be executed to adjust the contract for the net increase or decrease in monies resulting from the contractor's development costs as listed above in Subsection 104.13(B)(8), and the Department's evaluation costs. The supplemental agreement will terminate the Department's review of the VEP.
- (3) If the VEP is accepted in whole or in part, the necessary contract modifications and contract price adjustments will be made by the execution of a supplemental agreement which will specifically state that it is executed pursuant to the provisions of this subsection. The

Department will be the sole judge of the acceptability of a VEP and of the estimated net savings in construction costs from the adoption of all or any part of the VEP.

- (4) The contractor shall continue to perform the work in accordance with the requirements of the contract until a supplemental agreement incorporating the VEP has been executed, or until the contractor has been given written acceptance or rejection by the Engineer.
- (5) The executed supplemental agreement shall incorporate the changes in the plans, specifications, or other requirements of the contract which are necessary to permit the VEP, or such part of it which has been accepted, to be put into effect, and shall include any conditions upon which the Department's approval thereof is based. The executed supplemental agreement shall extend or decrease the contract time if required by the Department.
- (6) The executed supplemental agreement shall provide that the contractor be paid 50 percent of the net savings amount as reflected by the difference between the cost of the revised work and the cost of the related construction required by the original contract computed at contract bid prices. The net savings will take into account the contractor's cost of developing the VEP and implementing the change, and reducing this amount by the Department's cost for investigating and evaluating the VEP, including any ascertainable collateral costs to the Department. Such collateral costs may include increased costs for maintenance, operation, related work items, additional work items, or elements of related or additional work items.
- (7) The executed supplemental agreement shall also provide for the adjustment of contract prices. Contract prices shall be adjusted by subtracting the Department's share of the accrued net savings.
- (8) The amount specified to be paid to the contractor in the executed supplemental agreement shall constitute full compensation to the contractor for the VEP and the performance of the work thereof pursuant to the said supplemental agreement.

104.14 Final Clean Up:

Before final acceptance, the highway, borrow and local material sources, and all areas occupied by the contractor in connection with the work shall be cleaned of all rubbish, excess materials, temporary structures and equipment, and all parts of the work shall be left in a condition acceptable to the Engineer.

SECTION 105 CONTROL OF WORK:

105.01 Authority and Responsibility of the District Engineer:

The District Engineer is the State Engineer's direct representative in matters relating to construction activities within a defined area of the state. The District Engineer assigns a Resident Engineer to each of the projects within a District and is responsible to guide each Resident Engineer who administers a contract within the District. The District Engineer will assume the contractual responsibilities of the Resident Engineer if the position is vacated.

105.02 Authority and Responsibility of the Resident Engineer:

The Resident Engineer is the State Engineer's direct representative in matters relating to construction activities and is responsible for the administration and satisfactory completion of the contract. The Resident Engineer is authorized to determine the acceptability and quality of materials furnished and work performed.

The Resident Engineer is authorized to approve supplemental agreements to the contract. After execution of the contract, the Resident Engineer shall be contacted to resolve all questions pertaining to interpretation of the plans and specifications, alterations of the contract, and contractor compensation.

The Resident Engineer will have the authority to suspend the work in whole or in part due to: failure of the contractor to correct conditions unsafe for the workers or the general public; failure to carry out provisions of the contract; and failure to carry out orders. The Resident Engineer may suspend the work due to adverse weather conditions, conditions considered adverse to the prosecution of the work, or any other condition or reason deemed to be in the public interest.

105.03 Plans and Working Drawings:

The plans will show details of all structures, the lines, grades, typical cross sections of the roadway and the location and design of all structures. The contractor shall keep one set of project plans available at the project site at all times.

The plans shall be supplemented by such working drawings as are necessary to control the work adequately. Working drawings shall be furnished by the contractor and shall include such detailed plans as may be required to control the work adequately and are not included in the plans furnished by the Department.

Working drawings which consist of detailed plans, diagrams, etc. shall not be prepared until the elevations, lengths, geometrics, etc., have been verified with the Engineer.

Working drawings which include drawings for falsework, shoring, soldier piles, and other major temporary support structures shall be prepared by and bear the seal and signature of a Professional Engineer. Minor support structures as defined in Subsection 601-1 are exempt from this requirement. Falsework submittals will not be required for single and multiple barrel concrete box culverts with a clear span of 12 feet or less. This exemption does not relieve the contractor of the responsibility for providing adequate and safe falsework systems for these structures.

The contractor's schedule of work shall allow a sufficient period of time for the working drawing approval process as follows:

First Submission: 15 Working days or one working day per drawing, whichever is greater.

Second Submission: 10 Working days or 1/2 working day per drawing, whichever is greater.

The time period as shown above shall be doubled for submittals involving falsework or post-tensioning.

The contractor shall allow a minimum of three months for the review of any working drawing submitted for structures involving railroads.

In the event that the contractor's first submission does not meet ADOT standards for shop detail drawings or engineering design drawings and specifications, as determined by the Department, the entire submission will be returned without review and will be recorded as the first submission, and when resubmitted will be subject to the same time requirements as the first submission.

The contractor shall submit at least one copy of the material submitted to the Engineer directly to the appropriate departmental office in Phoenix so that the time necessary for the required approval may be shortened. The Engineer will specify which departmental office is to receive the copy.

The Department will endeavor to return corrected and/or approved drawings with a minimum of delay. In order to expedite the approval of critical drawings, the contractor should indicate in its submittal the order of preference for review and return of drawings and submit all drawings in the order of their importance.

All working drawings will be reviewed by the Engineer for conformance with the design intent of the contracts. Following the Engineer's review of each submittal of working drawings, the Engineer shall respond in writing to the contractor as follows:

- (A) "APPROVED," which means approved for construction, fabrication or manufacture, subject to the provision that the work shall be in accordance with the requirements of the contract. Final acceptance of the work shall be contingent upon such compliance;
- (B) "APPROVED AS NOTED," which means unless otherwise noted on the drawings approved for construction, fabrication or manufacture, subject to the provision that the work shall be carried out in compliance with all annotations or corrections indicated and in accordance with requirements of the contract. Final acceptance of work shall be contingent upon such compliance. If also marked "RESUBMIT," approval as noted is valid, and a corrected submittal of the drawings is required; or

- (C) "DISAPPROVED," which means that deviations from the requirements of the contract exist in the submittal such that no work based on such drawings shall be constructed, fabricated, or manufactured. The contractor shall revise the drawing in compliance with the Engineer's annotations and pursuant to all requirements of the contract and shall resubmit the working drawings to the Engineer for another review.

The Engineer's approval of the contractor's working drawings shall not relieve the contractor from responsibility for errors in dimensions, for successful completion of the work, or in conforming with the requirements of the plans and specifications nor for responsibility for damage claims as defined in Subsection 107.13. The contractor shall be responsible for the correctness of its plans and for shop fits and field connections, although the plans may have been approved. Any work done or materials ordered or delivered prior to the approval of such working drawings shall be at the sole risk of the contractor.

All working drawings which are drawings or prints shall be 36 by 22 inches in size. There shall be a two-inch margin on the left side of the 36-inch dimension and a 1/2-inch margin on the remaining three sides. A blank space, four inches wide by three inches high, shall be left inside the margin in the lower right hand corner. All drawings shall be made in such a manner that clear and legible copies can be made from them.

Five sets of prints or other acceptable copies and one set of positive reproducibles, such as positive mylars or positive sepia, shall be submitted to the Engineer for review. The prints and the reproducibles shall be clear, precise and suitable for microfilm photography. Upon completion of the review, the Engineer will stamp the drawings in accordance with item A, B, or C listed above and return one set of the prints to the contractor. Drawings requiring a resubmittal shall be revised in accordance with the Engineer's annotations, after being verified by the contractor, and resubmitted as described above, including the set of positive reproducibles. This resubmittal process shall continue until all corrections and revisions have been made and are acceptable to the Engineer.

No changes shall be made by the contractor to any working drawing after it has been approved by the Engineer.

The cost of furnishing all working drawings shall be considered as included in the contract unit price for one or more of the contract items.

105.04 Conformity with Plans and Specifications:

All work performed and all materials furnished shall be in reasonably close conformity to the lines, grades, cross sections, dimensions and material requirements, including tolerances shown on the plans or indicated in the specifications. The Engineer will determine the limits of reasonably close conformity in each individual case and the Engineer's judgment shall be final and conclusive. Where specific provisions regarding quality control standards are set forth elsewhere in the contract, they shall be controlling.

The Engineer's failure to discover or reject materials or work not in accordance with the contract during the progress of work shall not be considered an acceptance of the work or

materials, or a waiver of defects. Neither the failure to properly perform inspections, tests or approvals required by the contract documents nor the activities or duties to the Engineer in the administration of this contract shall relieve the contractor from its obligation to perform the work in strict accordance with the contract.

In the event the Engineer finds the materials furnished, work performed or the finished product in which the materials are used not within reasonably close conformity with the plans and specifications but that reasonably acceptable work meeting the design purpose has been produced, the Engineer will determine the conditions under which the work will be accepted and allowed to remain in place, unless there are other provisions in the contract that provide for this determination. Where this determination is made by the Engineer, rather than contract provisions, the Engineer will document the basis of acceptance by contract modification. The modification will provide for an appropriate adjustment in the contract price for such work or materials as necessary to support this determination.

In the event the Engineer finds the materials furnished, work performed, or the finished product in which the materials are used or the work performed are not in reasonably close conformity with the plans and specifications and have resulted in work which is not reasonably acceptable, the work or materials shall be removed and replaced or otherwise corrected by the contractor at no additional cost to the Department.

The contractor shall bear all the costs of providing the burden of proof that the nonconforming work is reasonable and adequately addresses the design purpose. The contractor shall bear all risk for continuing with nonconforming work until it is accepted.

The Engineer may impose conditions for acceptance of the nonconforming work. The contractor shall bear all costs for fulfilling the conditions.

The decisions whether the product satisfies the design purpose, whether the nonconforming work is reasonably acceptable, and the conditions for acceptance are within the sole discretion of the Engineer.

105.05 Restricted Performance Specifications:

When the work is performed under a restricted performance specification, the target values specified shall be considered to be the values strived for and from which any deviation is allowed.

It is the intent of the specifications that the materials and workmanship shall be uniform in character and shall conform as nearly as realistically possible to the prescribed target value or to the middle portion of the tolerance range. The purpose of the tolerance range is to accommodate occasional minor variations from the median zone that are unavoidable for practical reasons. When either a maximum and minimum value or both are specified, the production and processing of the material and the performance of the work shall be so controlled that material or work will not be preponderantly of borderline quality or dimension. The Engineer will determine acceptability of materials or construction as outlined in the applicable sections of the specifications.

105.06 Coordination of Plans, Specifications, and Special Provisions:

The Special Provisions, the Plans, the Standard Specifications, and all supplementary documents are essential parts of the contract and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work.

In case of discrepancy or conflict, the order in which they govern shall be as follows:

- (A) Supplemental Agreements
- (B) Special Provisions
- (C) Project Plans
- (D) Standard Drawings
- (E) Standard Specifications

Where dimensions on the plans are given or can be computed from other given dimensions they shall govern over scaled dimensions.

The contractor shall take no advantage of any error or omission in the plans, estimated quantities, or specifications. In the event the contractor discovers an error or omission, it shall immediately notify the Engineer in accordance with Subsection 104.03.

105.07 Cooperation by Contractor:

The contractor shall give the work the constant attention necessary to facilitate the progress thereof and shall cooperate with the Engineer, the Engineer's Inspectors, and other contractors in every way possible.

The contractor shall have on the work at all times, as the contractor's agent, a competent superintendent capable of reading and thoroughly understanding the plans and specifications and thoroughly experienced in the type of work being performed, who shall receive instructions from the Engineer. The superintendent shall have full authority to execute orders or directions of the Engineer without delay and to promptly supply such materials, equipment, tools, labor and incidentals as may be required. A superintendent shall be furnished irrespective of the amount of work subcontracted.

105.08 Cooperation with Utility Companies:

The Department will notify all utility companies, all pipe line owners or other parties affected and endeavor to have all necessary adjustments of the public or private utility fixtures, pipe lines and other appurtenances within or adjacent to the limits of construction, made as soon as practicable.

Water lines, gas lines, wire lines, service connections, water and gas meter boxes, water and gas valve boxes, light standards, cableways, signals and all other utility appurtenances within the limits of the proposed construction which are to be relocated or adjusted will be moved by the owners at their expense, unless otherwise provided for in the Special Provisions or noted on the project plans.

The contract will indicate various utility items, some of which will be relocated or adjusted by the utility owner, including the date by which the work is expected to be completed, and other utility items which shall be relocated or adjusted by the contractor.

It is understood and agreed that the contractor has considered in its bid all of the permanent and temporary utility appurtenances in their present or relocated positions as shown on the project plans or described in the Special Provisions.

The contractor shall make every effort to cooperate fully with each utility company and shall understand that delays to its operations may necessarily occur.

If, through the failure of the utility owners to relocate or adjust their facilities as provided for in the contract, the contractor sustains loss which could not have been avoided by the judicious handling of forces, equipment and plant or by reasonable revision in the contractor's schedule of operations, any revisions to the contract price or time will be provided in accordance with Subsections 104.02 and 108.08.

105.09 Cooperation Between Contractors:

The Department reserves the right at any time to contract for and perform other or additional work on or near the work covered by the contract.

When separate contracts are awarded within the limits of any one project, each contractor shall conduct its work so as not to interfere with or hinder the progress or completion of the work being performed by other contractors. Contractors working on the same project shall cooperate with each other as directed. If requested by the Engineer, each contractor shall furnish the Engineer with written evidence that the contractor has made the necessary arrangements with the other contractors for the successful prosecution of the work for the benefit of all parties.

Each contractor involved shall assume all liability, financial or otherwise, in connection with its contract and shall protect and save harmless the Department from any and all damages or claims that may arise because of inconvenience, delay or loss experienced by it or other contractors because of the presence and operations of other contractors working within the limits of the same project.

The contractor shall arrange its work and shall place and dispose of the materials being used so as not to interfere with the operations of the other contractors within the limits of the same project and on adjoining projects. The contractor shall join the contractor's work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

105.10 Construction Stakes, Lines and Grades:

Unless the contract provides for construction survey and layout by the contractor, the Engineer will set construction stakes establishing lines, slopes and continuous profile grade in road work and center line and bench marks for bridge work, culvert work, protective and accessory structures and appurtenances and will furnish the contractor with all necessary information relating to lines, slopes and grades. These stakes and marks will constitute the field control by and in accordance with which the contractor shall establish other necessary controls and perform the work.

During the course of construction the contractor shall submit requests for staking. The Department will not be responsible for staking delays unless the Engineer is provided 10 calendar days notice before beginning work on an item and thereafter 48 hours notice that stakes are needed.

When the contractor is aware of errors or suspects that there are errors in the staking, the contractor shall bring them to the attention of the Engineer prior to beginning any work on the basis of the errors. The contractor shall take no advantage of any staking error.

The contractor shall be held responsible for the preservation of all stakes and marks and if any of the construction stakes or marks have been carelessly or willfully destroyed or disturbed by the contractor, the cost of replacing them will be charged against it and will be deducted from the payment for the work.

The Department will be responsible for the accuracy of lines, slopes, grades and other engineering work which it provides under this subsection.

105.11 Authority and Responsibility of Project Supervisor and Inspectors:

The primary responsibility of Inspectors is to accurately document the work detailed in the plans and specifications. The documentation will include the level or degree of conformance of the work with the plans and specifications.

The Inspectors are also responsible for requiring conformance with plans and specifications and are authorized to reject work or materials not in conformance with plans and specifications. An Inspector has neither the authority to issue instructions contrary to the plans and specifications nor to alter or waive the provisions of the contract.

The Resident Engineer may appoint a Project Supervisor who will serve as Lead Inspector.

Unresolved contractor and Inspector disputes relative to interpretation of plans and specifications or acceptability of work or materials will be escalated to the Resident Engineer.

105.12 Inspection of Work:

All materials and each part or detail of the work shall be subject to inspection by the Engineer. The Engineer shall be allowed access to all parts of the work and shall be

furnished with such information and assistance by the contractor as is required to make a complete and detailed inspection.

The contractor shall schedule its operations to allow a reasonable amount of time for engineering inspection of the work. In most cases, inspection will be completed in eight work hours or less. The contractor shall not be entitled to additional compensation or an extension of contract time for delay resulting from such inspections. The Engineer shall perform the inspection as expeditiously as possible in order that the work might progress in an orderly and continuous manner.

Additional inspection costs incurred due to contractor errors shall be at no additional cost to the Department.

The contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as directed by the Engineer. After examination, the contractor shall restore said portions of the work to the standard required by the plans and specifications. Should the work thus exposed or examined prove acceptable, payment for uncovering or removal and replacement of the covering or making good of the parts removed will be made in accordance with the requirements of Subsection 104.02. Should the work so exposed or examined prove unacceptable, the uncovering or removal and replacement of the covering or making good of the parts removed, shall be at no additional cost to the Department.

Any work done or materials used without inspection by the Engineer may be ordered removed and replaced at no additional cost to the Department unless the Engineer failed to inspect after having been given a minimum of 48 hours notice in writing that the work was to be performed. Failure to reject any defective work or materials shall not in any way prevent later rejection when such defect is discovered nor obligate the Engineer to final acceptance.

When any unit of government, political subdivision, utility or any railroad corporation is to pay a portion of the cost of the work covered by the contract, its respective representatives shall have the right to inspect the work. Such inspection shall in no sense make any unit of government, political subdivision or any railroad corporation a party to the contract and shall in no way interfere with the rights of either party to the contract.

105.13 Removal of Unacceptable and Unauthorized Work:

All work which does not conform to the requirements of the contract will be considered as unacceptable work unless otherwise determined to be acceptable in accordance with the requirements of Subsection 105.04.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness or any other cause found to exist prior to the final acceptance of the work shall be removed immediately and replaced in an acceptable manner.

No work shall be done without lines and grades having been previously established. Work done contrary to the instructions of the Engineer, work done beyond the lines shown on the

project plans or as given, except as herein specified or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at no additional cost to the Department.

Upon failure on the part of the contractor to comply with any order of the Engineer made under the provisions of this subsection, the Engineer will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs from any monies due the contractor.

105.14 Load Restrictions:

The contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the project. A pamphlet, Sizes and Weights of Vehicles and Loads upon Highways, is available from the Motor Vehicle Division, Arizona Department of Transportation. A special permit will not relieve the contractor of liability for damage which may result from hauling of material or moving of equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or the roadway or to any other type of construction will not be permitted. Hauling of materials over the subgrade or the base course or surface course under construction shall be limited as directed by the Engineer. No loads will be permitted on a Portland cement concrete pavement, base or structure before the expiration of the curing period. The contractor shall be responsible for all damage done by the contractor's hauling equipment. In no case shall legal load limits be exceeded unless permitted in writing by the Engineer.

105.15 Maintenance During Construction:

The contractor shall maintain the work during construction and until the project is accepted except as otherwise specified in Subsection 104.04(C).

This maintenance shall constitute continuous and effective work prosecuted day by day with adequate equipment and forces to the end that the roadway or structures are kept in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be considered as included in the contract unit price for one or more of the contract items.

105.16 Failure to Maintain Roadway or Structure:

If at any time the contractor fails to comply with the provisions of Subsection 105.15, the Engineer will immediately notify the contractor of such noncompliance. If the contractor fails to remedy unsatisfactory maintenance within 24 hours after receipt of such notice, the

Engineer may immediately proceed to maintain the project and the entire cost of this maintenance will be deducted from monies due or to become due the contractor.

105.17 Furnishing Right-of-Way:

The Department will be responsible for the securing of all necessary rights-of-way in advance of construction. Any exceptions will be indicated in the contract.

105.18 Opening Sections of Project to Traffic:

The Engineer may order certain sections of work to be opened to traffic before completion or acceptance of the work. Opening these sections shall not constitute acceptance of the work or waiver of any contract provisions.

On those sections opened to traffic, the cost of maintaining the roadway to accommodate traffic will be at the Department's expense and the contractor will be compensated for costs incurred under Subsection 104.04. The Engineer will decide which maintenance is required. Compensation for additional expense and additional time if any, shall be set forth in a Supplemental Agreement for those sections of the project ordered opened to traffic if the opening is not due to the fault or inactivity of the contractor.

If the contractor is late in completing features of the work according to the contract or progress schedule, the Engineer will give written notification establishing a time period for completing these features. If the contractor fails to complete or make a reasonable effort to complete the work according to the written notification, the Engineer may order all or a portion of the project opened to traffic. The contractor shall not be relieved of liability or responsibility for maintaining the work and shall conduct the remaining construction operations with minimum interference to traffic without additional compensation for the added cost of the work.

Damage to the project that is not attributable to traffic shall be repaired at no additional cost to the Department. The removal of rock or mud slides shall be done on a basis determined by the Engineer before removal.

105.19 Substantial Completion:

The project is substantially complete and liquidated damages will no longer be assessed when all of the following have occurred:

- (A) All lanes of traffic of the completed project are finished and accepted and traffic can move unimpeded through the project at the posted speed;
- (B) All signage is in place and accepted;
- (C) All guardrails, drainage devices, ditches, excavation and embankment have been accepted; and

- (D) The only work left for completion is incidental, away from the paved portion of the highway, and does not affect the safety or convenience of the traveling public;

The decision whether the project is substantially complete is within the sole discretion of the Engineer.

105.20 Acceptance:

(A) Partial Acceptance:

If at any time during the prosecution of the project the contractor completes a unit or portion of the project, the contractor may submit a written request to the Engineer to make inspection of that unit. The Engineer will approve or disapprove the request within five working days.

If approved, and the Engineer finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, the Engineer may accept that unit as being completed and the contractor may be relieved of further responsibility for that unit. Such partial acceptance shall in no way void or alter any of the terms of the contract.

(B) Final Acceptance:

Upon notice from the contractor that the entire project is substantially complete, the Engineer will make an inspection. If all construction provided for and contemplated by the contract is found completed to the Engineer's satisfaction, that inspection will constitute the final inspection and the Engineer will make the final acceptance and notify the contractor in writing of this acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory or not complete, the Engineer will give the contractor written notice of the unsatisfactory or incomplete work and the contractor shall immediately correct such work. In such case, the Engineer will also give the contractor written notice as to whether or not the work is substantially complete. In addition, final acceptance will not be made until all completed plans and working drawings as required in Subsection 105.03 have been submitted and deemed acceptable by the Engineer.

Upon completion and correction of the work, as called for by the Engineer's notice, the above procedures will be repeated until the Engineer gives notice of substantial completion and final acceptance, separately or together.

105.21 Administrative Process for the Resolution of Contract Disputes:

The notice provision set forth in Subsection 104.03 is a contractual obligation assumed by the contractor in executing the contract. The contractor understands that it will be forever barred from recovering against the Department if it fails to give notice of any act or failure to act, by the Engineer, or the happening of any event, thing, or occurrence, in accordance with Subsection 104.03.

The administrative process for the resolution of disputes is sequential in nature and is composed of the following steps:

- Step I. Review by the Resident Engineer;
- Step II. Review by the District Engineer;
- Step III. Review by the State Engineer.

Except as provided in this subsection, no dispute will be accorded a particular level of review unless the dispute has been reviewed at the preceding level and the contractor rejects the decision in writing within the time period specified.

Unless specifically requested by the Department, the submission of additional information by the contractor at any step of the review process shall cause the process to revert to Step I. If at any step in the process a dispute is resolved, the contractor must sign a supplemental agreement which sets for the resolution of the dispute and includes an unconditional release as to any and all matters arising from the dispute.

The contractor shall also notify the Resident Engineer in writing that all documentation in support of the dispute has been provided to the Resident Engineer and that the administrative review process should begin. No formal action will be taken by the Resident Engineer until this written notification is received. The documentation provided to the Resident Engineer shall serve as the basis for evaluating the contractor's position regarding the dispute throughout the administrative process. As a minimum, the information described in Subsection 104.03 must accompany each dispute. If the following information applies, it shall also be provided in addition to the information required by Subsection 104.03:

- (A) If the dispute relates to a decision of the Engineer which the contract leaves to the Engineer's discretion or as to which the contract provides that the Engineer's decision is final, the contractor shall set out in detail all facts supporting its contention that the decision of the Engineer was not supported by any evidence.
- (B) If additional compensation is sought, the contractor shall submit the exact amount sought broken down into the following categories:
 - (1) Direct Labor
 - (2) Direct Materials
 - (3) Equipment
 - (4) Job Overhead
 - (5) General and Administrative Overhead

(6) Subcontractor's Work [broken down as (1), (2), (3) and (4) above]

(7) Other categories as specified by the contractor.

(C) If additional compensation or a time extension is sought, the contractor shall certify the above information in accordance with Subsection 104.03(B)(6).

The Resident Engineer will render a written decision regarding the matter in dispute within 10 calendar days of receipt of the contractor's notification that the dispute resolution process should begin.

The contractor shall, upon receipt of the decision by the Resident Engineer, either accept or reject the decision in writing. If the contractor does not reject the Resident Engineer's decision within 15 calendar days of its receipt, the contractor will be deemed to have accepted the decision, the dispute will be considered withdrawn from the administrative process, and there will be no further administrative remedy.

If the contractor rejects the decision of the Resident Engineer, the dispute will be forwarded by the Resident Engineer to the District Engineer. The District Engineer will, within 15 calendar days of receipt of the dispute information from the Resident Engineer, schedule and hold a meeting to review the dispute with the contractor. This time limit may be extended by mutual agreement of the parties. The District Engineer will, within 15 calendar days of the meeting, issue a written decision, with justification, regarding the dispute.

The contractor shall, within 15 calendar days of receipt of the decision, either accept or reject it in writing. If the contractor does not reject the District Engineer's decision within 15 calendar days, the contractor will be deemed to have accepted the decision and the dispute will be considered withdrawn from the administrative process and there will be no further administrative remedy.

If the contractor rejects the decision of the District Engineer, the District Engineer will forward the dispute to the State Engineer. The State Engineer will, within 15 calendar days of receipt of the dispute information from the District Engineer, schedule and hold a meeting with the contractor. This time limit may be extended by mutual agreement of the parties. The State Engineer will, within 15 calendar days of the meeting, issue a written decision, with justification, regarding the dispute.

The contractor shall, within 15 calendar days of the receipt of the decision of State Engineer, either accept or reject it in writing. If the contractor does not reject the State Engineer's decision within 15 calendar days, the contractor will be deemed to have accepted the decision, the dispute will be considered withdrawn from the administrative process, and there will be no further administrative remedy.

If the contractor rejects the decision of State Engineer, there will be no further automatic review of the dispute.

- (D) Contractor's Options After State Engineer Review: The decision of the State Engineer in relation to the contractor's claim shall be final unless the contractor commences arbitration or litigation as follows:
- (1) Where the amount in controversy is \$200,000.00 or less, the contractor's sole legal remedy shall be arbitration as prescribed in Subsection 105.22.
 - (2) Where the amount in controversy is more than \$200,000.00, the contractor's sole remedy shall be to initiate litigation pursuant to Section 12-821 et seq. of the Arizona Revised Statutes.
- (E) Mediation: If the contractor is not satisfied with the decision of the State Engineer, and prior to filing for arbitration or litigation, the contractor may request a non-binding mediation by filing a request for mediation in writing with the Engineer. The Engineer will then arrange for a mutually agreeable mediator. Such request for mediation shall be made within 30 calendar days from the date of the State Engineer's decision as provided for in this subsection.

In connection with the mediation, each party shall bear its own costs, attorneys fees, and expert fees. Any fees and expenses assessed by the mediator shall be borne equally by the parties.

105.22 Arbitration of Claims and Disputes:

If the contractor elects to invoke its right to arbitration, the contractor shall file a Demand for Arbitration in writing with the American Arbitration Association or United States Arbitration and Mediation of Arizona, and serve a copy thereof upon the State Engineer. Such Demand for Arbitration shall be made by the contractor within 30 calendar days of the date of the State Engineer's decision as provided for in Section 105.21 above, unless a mediation process is already underway, in which case the Demand for Arbitration shall be made within 30 days of the termination of the mediation process. The scope of the arbitration proceeding shall be restricted and limited to the matters presented to the State Engineer upon which the decision or determination was made and shall include no other matters. All arbitration of claims shall be conducted in Phoenix, Arizona, in accordance with the rules of the arbitration service hearing the dispute.

The decision or award of the arbitrator shall be supported by substantial evidence and, in writing, contain the basis for the decision or award and findings of fact. The decision or award by the arbitrator when made shall be final and nonappealable except as provided in Section 12-1512, Arizona Revised Statutes. Both the contractor and the Department shall be bound by the Arbitration Award for all purposes and judgment may be entered upon it in accordance with applicable law in the Superior Court of Arizona in and for the County of Maricopa.

For the purposes of this subsection, a claim for adjustment in compensation shall mean an aggregate of operative facts which give rise to the rights which the contractor seeks to enforce. That is to say, a claim under this subsection is defined as the event, transaction or set of facts that give rise to a claim for compensation, costs, expenses or damages.

In making a determination whether the amount in controversy is \$200,000.00 or less, the parties shall not consider, quantify or take into account any requested extensions of contract time, or the release or remission of liquidated damages previously assessed, under Subsection 108.08 and 108.09 of these specifications.

Any contractor having a claim, adjustment or dispute for an amount in excess of \$200,000.00 may waive or abandon the dollar amount of any such claim in excess of \$200,000.00 so as to bring the claim, adjustment or dispute within the scope and coverage of this subsection, provided that the amount allowed to any such contractor by the arbitration award shall not exceed \$200,000.00. Various damages claimed by the contractor for a single claim may not be divided into separate proceedings to create claims within the \$200,000.00 limit.

The claim shall be submitted to a single arbitrator who shall be selected by the parties from a list of arbitrators furnished by the arbitration service. Each party shall alternately strike names from the list until only one name remains. The person whose name thus remains on the list of arbitrators is their first choice, but if that person is not available to serve, the two persons whose names were last stricken are acceptable, with the one whose name was last stricken being the first alternate.

Unless agreed to otherwise, the parties shall select the arbitrator within 10 calendar days after each has received a copy of the list of arbitrators.

Each party to the arbitration shall bear its own costs, attorney fees and expert fees. Any other costs and fees assessed by the arbitration service shall be divided equally between the parties to the arbitration.

SECTION 106 CONTROL OF MATERIAL:

106.01 Source of Supply and Quality Requirements:

The contractor shall furnish all materials required to complete the work, except materials that are designated in the Special Provisions to be furnished by the Department as set forth in Subsection 106.12.

Only materials conforming to the requirements of the specifications shall be incorporated into the work. Materials shall be new except as may be provided elsewhere in the contract. The materials shall be manufactured, handled, and used in a workmanlike manner to insure completed work in accordance with the requirements of the plans and the specifications.

In order to expedite the inspection and testing of materials, the contractor shall notify the Engineer of the contractor proposed sources of materials prior to delivery. At the option of the Engineer, materials may be approved at the source of supply before delivery is started. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the contractor shall furnish materials from other sources.

Whenever water is required on a project, as part of either a process or a product, it shall be free of contaminants which, in the judgment of the Engineer, constitute a health hazard to those individuals employed on the project and to the general public.

Untreated effluent shall not be utilized in any aspect of the work.

106.02 Items of Special Manufacture:

At the preconstruction conference the contractor shall furnish the Engineer a list of all items of special manufacture or items which are or may be in short supply which will be incorporated into the work. Items of special manufacture shall include, but shall not be limited to, materials and equipment for traffic signal and lighting systems, steel bridge members, precast, prestressed concrete bridge members, structural components for rest areas, compressors, pumps, sewage treatment plants, water treatment plants, and materials related thereto.

The items of special manufacture which have been agreed upon by the Engineer and the contractor shall be ordered by the contractor promptly so that they will be available as required and will not delay the work.

The contractor shall advise the Engineer about the dates of the orders and the dates that the items are expected to be received.

106.03 Blank

106.04 Tests and Acceptance of Material:

(A) General:

All materials will be inspected, tested and approved by the Engineer prior to incorporation in the work. Any work in which materials not previously approved are used shall be performed at the contractor's risk and may be considered as unauthorized and unacceptable and not subject to the payment provisions of the contract.

Materials will be sampled and tested in accordance with the requirements of the Materials Testing Manual and the Materials Policy and Procedure Directives Manual and by a qualified representative of the Department unless otherwise specified in the contract documents. Copies of all test results will be furnished to the contractor's representative at the contractor's request.

Whenever a reference is made in the Specifications to an Arizona Test Method, it shall mean the test method in effect on the bid opening date.

Whenever a reference is made in the Specifications to a Federal Specification or to a specification or test designation of the American Association of State Highway and Transportation Officials, the American Society for Testing and Materials, or any other recognized national organization, it shall mean the year of adoption or latest revision of the specification or test designation in effect on the bid opening date.

(B) Contractor Quality Control:

The contractor is responsible for quality control measures necessary to provide acceptable quality in the production, handling, and placement of all materials.

The Specifications may require specific quality control measures for certain materials by referencing Subsection 106.04(C). When so specified, the contractor shall provide all the personnel, equipment, materials, supplies, and facilities necessary to obtain samples and perform the tests listed in the applicable section and as given herein in Subsection 106.04(C).

(C) Specific Contractor Quality Control Measures:

(1) General:

At the preconstruction conference, the contractor shall designate a qualified employee as Quality Control Manager to be responsible for implementing, monitoring and, as necessary, adjusting the processes to assure acceptable quality. The quality control manager shall be a full time employee of the contractor, and shall be on the project site during all construction activities. Also at the preconstruction conference, the contractor shall be prepared to discuss his understanding of the quality control responsibilities for the specified materials.

When requested by the contractor, the Department will engage in testing of materials for the purpose of correlating the contractor's test results to those of the Department's acceptance laboratory.

(2) Quality Control Laboratory:

All field and laboratory sampling and testing shall be performed by a laboratory or laboratories listed for the tests to be performed in the ADOT Directory of Eligible Materials Testing Laboratories, meeting the requirements of the Department's "System for the Evaluation of Testing Laboratories." The directory and requirements may be obtained from ADOT Materials Group, 1221 North 21st Avenue, Phoenix, Arizona 85009.

The Engineer will promptly advise the contractor in writing of any noted deficiencies concerning the laboratory facility, equipment, supplies, or testing personnel and procedures.

(3) Quality Testing Supervisor:

The contractor shall designate a Quality Testing Supervisor(s) who is responsible to supervise the sampling and testing, and who meets the requirements given in Table 106-1 for the specific material on which sampling and testing is being performed. The Quality Testing Supervisor(s) shall be an employee of the contractor or a consultant engaged by the contractor, and may be responsible for supervising the sampling and testing on more than one project. The Quality Testing Supervisor(s) shall be able to be at the job site within 24 hours from any point in time. Additional information regarding Quality Testing

Supervisor certification can be obtained from the ADOT Materials Group, 1221 North 21st Avenue, Phoenix, Arizona 85009.

TABLE 106-1	
QUALITY TESTING SUPERVISOR REQUIREMENTS	
Soils and Aggregate	
Field	Laboratory
Arizona Technical Institute (ATI) "Field" certification required plus one of (a) through (g) below.	Arizona Technical Institute (ATI) "Soils/Aggregate" certification required plus one of (a) through (g) below.
Asphaltic Concrete	
Field	Laboratory
Arizona Technical Institute (ATI) "Field" certification required plus one of (a) through (g) below.	One of (a) through (g) below.
Concrete	
American Concrete Institute (ACI) "Concrete Field Testing Technician Grade I" certification plus one of (a) through (g) below.	
(a) Professional Engineer, registered in the State of Arizona, with one year of highway materials testing experience acceptable to the Department. (b) Engineer-In-Training, certified by the State of Arizona, with two years of highway materials testing experience acceptable to the Department. (c) Obtained a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology, Construction, or related field acceptable to the Department; and with three years of highway materials testing experience acceptable to the Department. (d) Certified by the National Institute for Certification in Engineering Technologies (NICET) in the Construction Materials Testing field as an Engineering Technician (Level III) or higher in the appropriate subfield in which sampling and testing is being performed. (e) Certified by NICET in the Transportation Engineering Technology field as an Engineering Technician (Level III) or higher in the Highway Materials subfield. (f) Certified by NICET as an Engineering Technician, or higher, in Civil Engineering Technology with five years of highway materials testing experience acceptable to the Department. (g) An individual with eight years of highway materials testing and construction experience acceptable to the Department.	

(4) Quality Testing Technician:

Quality Testing Technicians who perform the actual sampling and testing shall meet the requirements given in Table 106-2 for the specific material on which sampling and testing is being performed. Quality Testing Technicians shall be employees of the Quality Control Laboratory and be supervised by a qualified Quality Testing Supervisor for the specific material on which sampling and testing is being performed. Additional information regarding Quality Testing Technician certification can be obtained from the ADOT Materials Group, 1221 North 21st Avenue, Phoenix, Arizona 85009.

TABLE 106-2 QUALITY TESTING TECHNICIAN REQUIREMENTS	
Soils and Aggregate	
Field	Laboratory
Arizona Technical Institute (ATI) "Field" certification.	Arizona Technical Institute (ATI) "Soils/Aggregate" certification.
Asphaltic Concrete	
Field	Laboratory
Arizona Technical Institute (ATI) "Field" certification.	Certified by the National Institute for Certification in Engineering Technologies (NICET) in the Construction Materials Testing field as an Associate Engineering Technician (Level II) or higher in the Asphalt subfield.
Concrete	
American Concrete Institute (ACI) "Concrete Field Testing Technician Grade I" certification.	

(5) Records:

The contractor shall maintain complete testing records and make them available to the Department for review and copies as requested.

Linear control charts shall be maintained by the contractor. Control charts shall be posted in a location satisfactory to the Engineer and shall be kept up to date at all times. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the upper and/or lower specification limit applicable to each test parameter, and the contractor's test results. The contractor shall use the control charts as part of a process control system for identifying production and equipment problems and for identifying potential pay factor reductions before they occur.

(6) Weekly Quality Control Reports:

The contractor shall submit Weekly Quality Control Reports to the Engineer. The weekly reports shall state the type of work performed during the report period and other process control measures taken to assure quality. Results of all tests, corrective action, retests, and linear control charts shall be attached to the weekly report. The report period shall end at

midnight of each Friday, and the report shall be submitted to the Engineer no later than 5:00 p.m. of the following Wednesday.

106.05 Certificates:

(A) General:

The contractor shall submit to the Engineer an original or copy of either a Certificate of Compliance or a Certificate of Analysis, as required, prior to the use of any materials or manufactured assemblies for which these specifications or the Special Provisions require that such a certificate be furnished.

The Engineer may permit the use of certain materials or manufactured assemblies prior to, or without, sampling and testing if accompanied by a Certificate of Compliance or Certificate of Analysis, as herein specified. Materials or manufactured assemblies for which a certificate is furnished may be sampled and tested at any time, and, if found not in conformity with the requirements of the plans and the specifications, will be subject to rejection, whether in place or not.

Certificates shall comply with the requirements specified herein and of the Materials Testing Manual.

(B) Certificate of Compliance:

A Certificate of Compliance shall contain the following information:

- (1) A description of the material supplied.
- (2) Quantity of material represented by the certificate.
- (3) Means of material identification, such as label, lot number, or marking.
- (4) Statement that the material complies in all respects with the requirements of the cited specifications. Certificates shall state compliance with the cited specification, such as AASHTO M 194, ASTM A 588; or specific table or section of the Arizona Department of Transportation Standard Specifications or Special Provisions. Certificates may cite both, if applicable.
- (5) The name, title, and signature of a person having legal authority to bind the manufacturer or the supplier of the material. The date of the signature shall also be given. The name and address of the manufacturer or supplier of the material shall be shown on the certificate. A copy or facsimile reproduction will be acceptable. However, the original certificate shall be made available upon request. The person signing the certificate shall be in one of the following categories:
 - (a) An officer of a corporation.

- (b) A partner in a business partnership or an owner.
- (c) A general manager.
- (d) Any person having been given the authority in writing by one of the three listed above. The manufacturer or supplier may submit a list of those who are authorized to sign certificates. This list shall be submitted under the name, title, and signature of one of the first three listed above. This list will be kept on file for subsequent certificates received on that project.

Each of the first four items specified above shall be completed prior to the signing as defined in item five. No certificate will be accepted that has been altered, added to, or changed in any way after the authorized signature has been affixed to the original certificate. However, notations of a clarifying nature, such as project number, contractor, or quantity shipped are acceptable, provided the basic requirements of the certificate are not affected.

(C) Certificate of Analysis:

A Certificate of Analysis shall include all the information required in a Certificate of Compliance and, in addition, shall include the results of all tests required by the specifications.

106.06 Inspection of the Plant:

The Engineer may undertake the inspection of materials at the source. In the event plant inspection is undertaken, the Engineer shall have the cooperation and assistance of the contractor and the producer with whom the contractor has contracted for materials, and the Engineer shall have full entry at all times to such parts of the plant as may be involved in the manufacture or production of the materials being furnished. Adequate safety measures shall be provided and maintained.

The Department reserves the right to retest all materials which have been tested and accepted at the source of supply after the same have been delivered and prior to incorporation into the work and to reject all materials which, when retested, do not meet the requirements of the specifications.

106.07 Sampling Device:

All secondary crushers and screening plants used in producing material shall be equipped with a mechanical sampling device or devices that can either be operated from the ground or is accessible to the operator on a platform.

These devices shall be constructed and operated so that they will move at a constant rate across the full width of material and collect a representative sample of the falling column of material from the discharge belt or chute while the plant is in operation. The sampling

devices shall be substantially constructed so that a sample weighing up to 100 pounds can be taken.

The sampling devices shall be equipped with necessary attachments to convey the samples to the ground so that they can be safely and conveniently collected.

The sampling devices shall be approved by the Engineer and shall be maintained in a satisfactory working condition so that samples may be taken at any time, as required by the Engineer.

106.08 Proprietary Products, Trade Names and Substitutions:

The contract may contain references to equipment, materials or patented processes by manufacturer, trade name, make or catalog number.

Such references shall be regarded as establishing a standard of quality, finish, appearance or performance or as indicating a selection based upon compatibility with existing equipment or materials and shall not be construed as limiting selection to a specific item or source.

The use of an alternative or substitute article of equipment, material or process which, for the purpose intended, is of equal quality, finish, appearance, or performance and which is compatible with existing equipment and materials, when required, will be permitted, subject to the following conditions:

- (A) No consideration will be given to a request for substitution prior to contract award. After award and in time to permit consideration and approval without delaying work, the contractor shall submit a written request for substitution.
- (B) A request for substitution shall include all information necessary for proof of equality and suitability for substitution, including samples for testing, if required. The request for substitution shall meet the stipulations set forth in Subsection 104.13 for Value Engineering Proposals.
- (C) The Department will evaluate the information submitted, perform tests when necessary and make comparison. The Engineer will then make the final decision as to acceptability of the proposed substitution. The Department will neither be liable for any delay in acting upon any request for substitution nor for any failure to accept any request pursuant to this substitution.

106.09 Storage of Materials:

Materials shall be so stored as to insure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located so as to facilitate their prompt inspection. Approved portions of the right-of-way may be used for storage purposes and for the placing of the contractor's plant and equipment, but any additional space required for this purpose shall be provided by the contractor at no additional cost to the

Department. Private property shall not be used for storage purposes without written permission of the owner and lessee and, if requested by the Engineer, copies of such written permission shall be furnished the Engineer. All storage sites shall be restored to their original condition by the contractor at no additional cost to the Department. This shall not apply to the stripping and storing of topsoil or to other materials salvaged from the work.

106.10 Handling Materials:

All materials shall be handled in such a manner as to preserve their quality and fitness for the work.

Aggregates shall be transported from the storage site to the work in tight vehicles so constructed as to prevent loss or segregation of materials after loading and measuring in order that there may be no inconsistencies in the quantities of materials as loaded and intended for incorporation into the work and the quantities of materials as actually received at the place where they are to be incorporated into the work.

106.11 Unacceptable Materials:

Material not conforming to the requirements of the specifications, whether in place or not, will be rejected and shall be promptly removed from the site of the work, unless otherwise directed by the Engineer. No rejected material, the defects of which have been corrected, shall be returned to the work site until such time as approval for its use has been given by the Engineer.

106.12 Department-Furnished Material:

The contractor shall furnish all materials required to complete the work, except those specified to be furnished by the Department.

Material furnished by the Department will be delivered or made available to the contractor as specified in the Special Provisions.

The contractor shall receive, inventory, store, inspect, protect, distribute, and install Department furnished material unless otherwise specified in the Special Provisions.

The cost of handling and placing all materials after they are delivered to the contractor shall be considered as included in the contract price for the item in connection with which they are used.

The contractor will be held responsible for all material delivered to it. Deductions will be made from any monies due it to make good any shortages or deficiencies, from any cause whatsoever and for any damage which may occur after such delivery, and for any late delivery charges.

106.13 Warranties and Guaranties:

The contractor shall obtain such manufacturer's or producer's warranties or guaranties on all items, materials, electrical or mechanical equipment consistent with those provided as customary trade practice. The form in which such warranties or guaranties are delivered to the contractor shall include the provision that they are subject to transfer to the maintaining agency as named by the Department, and shall be accompanied by proper validation of such fact. Transfer of warranties or guaranties shall occur at the time of final acceptance of the work or equipment by the Department.

In addition, a contractor warranty or guaranty shall be furnished providing for satisfactory in service operation of the mechanical and electrical equipment and related components for a period of six months following project acceptance.

Should any defect develop during this six month period, the malfunction or defect shall be corrected by and at the expense of the contractor, including all labor, material and associated costs.

106.14 Approved Products List:

The Approved Products List is a list of products which have been shown to meet the requirements of these Standard Specifications. The Approved Products List is maintained by the Department and updated monthly. Copies of the most current version are available on the internet at <http://www.dot.state.az.us/ABOUT/atrc/apl.htm>.

The contractor shall verify that any products chosen for use from the Approved Products List are selected from the version which was most current at the time of the bid opening. Unless otherwise specified in the Special Provisions, products not appearing on the Approved Products List at the time of the bid opening may be used if they meet the requirements of the plans and specifications, and are submitted for approval as specified below:

- (A) No consideration will be given to a request for approval of a new product prior to contract award. After award and in time to permit consideration and testing without delaying work, the contractor shall submit a written request for approval.
- (B) A request for approval shall include all information necessary for proof of conformance to the requirements of the plans and specifications, including samples for testing, if required.
- (C) The Department will evaluate the information submitted and perform tests when necessary. The Engineer will then make the final decision as to acceptability of the proposed new product. The Department will neither be liable for any delay in acting upon any request for approval of a new product nor for any failure to accept any request pursuant to this subsection.

When the Special Provisions limit product selection to only those listed on the Approved Products List, other products will not be evaluated or approved.

SECTION 107 LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC:

107.01 Laws to be Observed:

The contractor shall keep fully informed of all Federal, State, and local laws, ordinances and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work or which in any way affect the conduct of the work. The contractor shall at all times observe and comply with all laws, ordinances, regulations, orders and decrees and shall defend, indemnify, and hold harmless the Department and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by the contractor or by any of his subcontractors or suppliers, or by any of their employees. The contractor shall comply with Drug-Free Workplace Act, Americans with Disabilities Act, OSHA, and all other pertinent laws relating to conditions of employment.

In connection with the performance of the work, the contractor shall not discriminate against any employee or applicant for employment because of race, religion, color, age, disability, or national origin. The aforesaid requirement shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training, including apprenticeship. The contractor shall post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Department setting forth the provisions of the nondiscrimination requirements. One or more bulletin boards, large enough to display posters and other information required in the contract shall be erected on the job site before any work is allowed to begin. The location of the bulletin board(s) will be subject to the approval of the Engineer.

The contractor shall also insert the nondiscrimination requirements in all subcontracts.

107.02 Permits, Licenses and Taxes:

The contractor shall procure all permits and licenses; pay all charges, fees, and taxes; and give all notices necessary and incidental to the due and lawful prosecution of the work.

107.03 Patented Devices, Materials and Processes:

If the contractor employs any design, device, material or process covered by letters of patent or copyright, the contractor shall provide for such use by suitable legal agreement with the patentee or owner.

The contractor and the surety shall defend, indemnify, and hold harmless the Department, any affected third party or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process or any trademark or copyright and shall indemnify the Department for any costs, expenses and damages which it may be obliged to pay by reason of any infringement, at any time during the prosecution or after the completion of the work.

107.04 Federal Aid Participation:

When the United States Government pays all or any portion of the cost of a project, the Federal laws and the rules and regulations made pursuant to such laws shall be observed by the contractor and the work shall be subject to the inspection of the appropriate Federal agency.

Participation and inspection shall in no sense make the Federal Government a party to the contract and shall in no way alter the rights of either party to the contract.

107.05 Archaeological Features:

The attention of the contractor is directed to Title 41, Article 4, Archaeological Discoveries, Sections 41-841, et seq., of the Arizona Revised Statutes, which make it a felony, punishable by a fine and imprisonment, to investigate, explore or excavate on State land, in or on prehistoric ruins, ancient burial grounds, fossilized footprints, hieroglyphics and all other archaeological features of Arizona without permits from the Arizona State Museum.

Section 6(a) of the Federal Archaeological Resources Protection Act of 1979 specifies that no person may excavate, remove, damage or otherwise alter or deface any archaeological resource located on public (Federal) lands or Indian lands unless such activity is pursuant to a permit issued under Section 4 of the Act. Violations of this act are considered a felony and are punishable by fine and imprisonment.

Although the Department will make every effort prior to construction to identify all cultural resources in a project area, previously unidentified archaeological materials could be found during the construction of the project. When archaeological, historical or paleontological features are encountered or discovered during any activity related to the construction of the project, the contractor shall stop work immediately at that location and shall take all reasonable steps to secure the preservation of those features and notify the Engineer.

The Engineer will direct how to protect the features. The contractor shall not resume work until it is so directed by the Engineer. In the event of a suspension of work pursuant to this clause, the contractor shall refer to the provisions of Subsection 104.02

107.06 Historic Preservation:

The attention of the contractor is directed to Title 41, Chapter 4.2, Historic Preservation, Section 41-861 et seq., Arizona Reserved Statutes, which makes it a felony to intentionally possess, sell or transfer any human remain, funerary object or other artifact.

Although the Department will make every effort prior to construction to identify all items that require Historic Preservation in a project area, previously unidentified human remains, funerary objects, or artifacts may be found during the construction of the project. When human remains or funerary objects are encountered or discovered during any activity related to the construction of a project, the contractor shall stop work immediately at that location and shall take all reasonable steps to secure the preservation of those items and notify the Engineer.

The Engineer will direct how to protect the items. The contractor shall not resume work until it is so directed by the Engineer. In the event of a suspension of work pursuant to the clause, the contractor shall refer to the provisions of Subsection 104.02.

107.07 Sanitary, Health, and Safety Provisions:

The contractor shall provide and maintain in a neat and sanitary condition such accommodations for the use of the contractor's employees as may be necessary to comply with the requirements and regulations of the Arizona State Department of Health Services or other authorities having jurisdiction therein.

Attention is directed to Federal, State and local laws, rules and regulations concerning construction safety and health standards. The contractor shall not require any workers to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to their health or safety.

Occupational Safety and Health Standards shall apply at all times. The contractor shall have, in accordance with OSHA requirements, Material Safety Data Sheets (MSDS) available for all applicable materials stored or utilized on the project. Should the contractor fail to follow OSHA regulations, the Engineer may suspend the work by written notice until compliance has been achieved. Any such failure to comply with OSHA regulations shall constitute waiver of any right to claim for such suspended work. If regulations are in conflict, the more strict regulation will apply.

Prior to construction the Department will make a reasonable effort to locate, identify and remove potentially hazardous or contaminated materials, including underground storage tanks, within a project area. Despite these efforts, some of these materials may still be found during the construction of the project. During construction operations, should material be encountered which the contractor believes to be hazardous or contaminated, the contractor shall immediately do the following:

- (1) Stop work and remove all workers within the contaminated area. For life threatening situations, follow the procedures in the Safety Plan, specified in Subsection 107.08.
- (2) Barricade the area and provide traffic control, if necessary, to prohibit unauthorized entry.
- (3) Notify the Engineer. If the Engineer cannot be reached from throughout the State, contact the Arizona Department of Transportation Operations Center at (602) 257-1563. If the Operations Center cannot be reached, contact the Department of Public Safety (DPS). The contractor shall not resume work in the area suspected to contain hazardous or contaminated materials until approved by the Engineer.

The Department will determine the extent and nature of the hazardous or contaminated area and specify a clean-up plan, if necessary. Once the Department determines the limits of the area affected by the contaminated materials, work may then be resumed for the

remaining areas of the project where contamination is determined not to present a significant hazard.

Substantial suspension of work as a result of the discovery of contaminated or hazardous materials within the project limits shall be in accordance with the requirements of Subsection 104.02.

The Department will determine the contractor's qualifications to perform the work specified in the clean-up plan. If the contractor is not qualified to do the work specified in the clean-up plan, the Department will obtain a contractor for cleanup. The Engineer will execute a supplemental agreement to cover the additional work, in accordance with Subsection 104.02 of the specifications.

107.08 Public Convenience and Safety:

The contractor shall at all times so conduct its work as to insure the least possible obstruction to traffic.

The safety and convenience of the general public and the residents along the highway and the protection of persons and property shall be provided for by the contractor in accordance with the requirements of Subsection 104.04.

The contractor shall abide by OSHA Regulations, including, but not limited to, 29 CFR, Part 1926, and 29 CFR, Part 1910, as well as all applicable standards of the U.S. Environmental Protection Agency (EPA), the Arizona Department of Environmental Quality (ADEQ), and the U.S. Mine Safety and Health Administration (MSHA). The contractor shall maintain a copy of the specified OSHA Standards on the construction site at all times.

The contractor shall submit a Safety Plan at the preconstruction conference. The Safety Plan shall specify the procedures the contractor will implement to satisfy OSHA and any state occupational safety guidelines related to the worker, as well as the public, in the construction of excavations, structures and confined air spaces along with all other activities involved in the project. The plan must also address:

- (1) Site-specific safety rules and procedures to deal with the types of risks expected to be encountered on the site;
- (2) Routine inspection of construction sites to ensure compliance with applicable local, state, and federal safety laws and regulations;
- (3) Training of employees in safe practices and procedures;
- (4) Availability of first-aid, medical, and emergency equipment and services at the construction site, including arrangements for emergency transportation; and
- (5) Security procedures to prevent theft, vandalism, and other losses at the construction site.

The Engineer will review the Safety Plan within 10 working days and identify any additional items to be included. The contractor shall then modify the Safety Plan, if necessary, for re-submittal to the Engineer within five working days. The contractor shall not commence work until the Safety Plan has been approved, unless authorized by the Engineer.

The Safety Plan shall include a list of emergency procedures, phone numbers, and methods of communication for medical facilities, Police, Fire Department, and other emergency services which may become necessary. The contractor shall be responsible for providing First Aid treatment and medical supplies on the project site, in accordance with OSHA 29 CFR, Part 1910, and for producing and maintaining records of any injury-related incidents. The Safety Plan shall include the requirement that all workers must wear OSHA approved hard hats, reflective safety vests or other approved high visibility warning garments, work shoes, and, when appropriate, safety glasses while in construction areas. The Contractor's Project Superintendent or Safety Supervisor shall ensure that visitors comply with the above requirements as appropriate.

The contractor shall designate a competent person as Safety Supervisor to be responsible for implementation of the Safety Plan throughout the contract period. The Safety Supervisor shall be capable of identifying existing and predictable hazards in the surroundings, or working conditions which are unsanitary, hazardous, or dangerous to employees, and have authority to take prompt corrective measures to mitigate or eliminate them. The Safety Supervisor shall also conduct safety meetings, oversee and maintain safe jobsite conditions, and ensure that emergency procedures, phone numbers, and all applicable OSHA notification posters are conspicuously placed in all work areas.

The Safety Supervisor shall maintain records demonstrating that all workers have sufficient experience to operate their equipment, and have been instructed in the proper operation of the equipment.

The Safety Supervisor shall furnish evidence that crane operators have been instructed in accordance with the requirements of OSHA 29 CFR, Part 1926.550, Subpart N, and 1926.955, Subpart V.

The Safety Plan submitted by the contractor shall include proposed methods to prevent unauthorized persons from gaining access to the work areas.

In conjunction with the Safety Plan, the contractor shall furnish and install 72-inch temporary chain link fencing, or approved equal, satisfactory to the Engineer, around all major structure construction areas (i.e., bridges, pumphouses, drop structures, retaining walls, etc.) and around any unattended excavation deeper than four feet, with slopes steeper than 1:2 (V:H). Temporary fencing shall completely enclose the referenced construction activity and shall be secured after normal working hours to prevent unauthorized access. Where called for in the plans, new permanent fencing shall be installed as soon as practicable.

Temporary fence materials which are no longer needed to restrict access to the work area, may be utilized in constructing permanent fence. Fence materials, which in the opinion of

the Engineer are unacceptable due to either appearance or structural defects, shall be replaced with new materials. No direct payment will be made for furnishing or installing temporary fencing. Permanent fencing will be reimbursed under the appropriate bid items.

Unless otherwise approved in writing by the Engineer, open utility trenches shall be limited to 50 feet in length, except for cast-in-place pipe installations, during non-working hours and shall be covered with steel plate in a manner satisfactory to the Engineer.

107.09 Barricades and Warning Signs:

The contractor shall provide, erect, and maintain all necessary barricades, suitable and sufficient lights, danger signals, signs and other traffic control devices and shall take all necessary precautions for the protection of the work and safety of the public. Highways closed to traffic shall be protected by effective barricades, and obstructions shall be illuminated during hours of darkness. Suitable warning lights shall be provided to control and direct traffic properly.

The contractor shall erect warning signs in advance of any place on the project where operations may interfere with the use of the road by traffic, and at all intermediate points where the new work crosses or coincides with an existing road. No signs, barricades, lights, or other protective devices shall be dismantled or removed without permission of the Engineer.

All signs, barricades, lights, temporary signals, and other protective devices shall conform to the requirements of the Manual of Uniform Traffic Control Devices (MUTCD) and associated Arizona Department of Transportation Supplement (ADOT Supplement).

107.10 Use of Explosives:

When the use of explosives is necessary for the prosecution of the work, the contractor shall exercise the utmost care not to endanger life or property. The contractor shall be responsible for all damage resulting from the use of explosives.

The contractor shall furnish and erect special signs to warn the public of the contractor's blasting operations. Such signs shall be placed at appropriate points within the limits of the project and these signs shall be maintained as to be clearly evident to the public during all critical periods of the blasting operations.

If blasting is to be done involving the use of electric blasting caps, the signs shall include a warning statement that all mobile radio transmitters should be turned off.

In advance of doing any blasting work involving the use of electric blasting caps within 200 feet of any railroad track or structure, the contractor shall notify the railroad company of the locations, date, time and approximate duration of such blasting operations.

The method of use, storing and handling of explosives and liquid inflammable materials shall conform with all State and local laws, regulations and safety codes. All storage places shall be marked clearly and in large letters: DANGEROUS EXPLOSIVES.

Where no local laws or ordinances apply, storage shall be provided satisfactory to the Engineer and in general not closer than 1,000 feet from the road or from any building, camping area, or place of human occupancy.

The contractor shall notify each property owner and public utility company having structures or facilities in proximity to the site of the work of the contractor's intention to use explosives. Such notice shall be given sufficiently in advance to enable them to take such steps as they may deem necessary to protect their property from damage.

Before any explosives are used, the contractor shall obtain necessary permits from and comply with the requirements of the National Park Service, Forest Service, Bureau of Indian Affairs or other authority having jurisdiction over the area.

107.11 Protection and Restoration of Property and Landscape:

The contractor shall be responsible for the preservation of all public and private property and shall protect carefully from disturbance or damage all land monuments and property marks until the Engineer has witnessed or otherwise referenced their location. Land monuments and property marks shall not be moved by the contractor until directed by the Engineer.

Private mail boxes within the limits of operations shall be temporarily or permanently relocated, as required, by the contractor in such a manner as to permit uninterrupted mail service.

Existing fences, pole lines, signs, buildings and structures that are to remain in place shall be protected from injury or damage.

The contractor shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any act, omission, neglect or misconduct in the contractor's manner or method of executing work or at any time due to defective work or materials and the contractor will not be released from said responsibility until the project has been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect or misconduct in the execution of the work or in consequence of the nonexecution thereof by the contractor, the contractor shall restore, at no additional cost to the Department, such property to a condition similar to or equal to that existing before such damage or injury was done, by repairing, rebuilding or otherwise restoring as may be directed or it shall make good such damage or injury in an acceptable manner.

The contractor shall not deface, injure or destroy trees, shrubs or cacti except as required to complete the proposed construction. The attention of the contractor is called to the requirements of the Arizona Native Plant Law, Arizona Revised Statutes Section 3-901, et seq. The contractor shall give the Arizona Department of Agriculture at least 10 days notice prior to any clearing operations.

Native plants as defined by the Statutes shall not be transported from the land or offered for sale without the written permission of the Commission.

Notice shall be sent to:

Assistant Director
Division of Compliance
Arizona Department of Agriculture
State Office Building, Room 414
1688 West Adams Street
Phoenix, Arizona 85007

Materials removed during construction operations such as trees, stumps, building materials, irrigation and drainage structures, broken concrete and other similar materials shall not be dumped on either private or public property unless the contractor has obtained written permission from the owner or public agency with jurisdiction over the land. Written permission will not be required, however, when materials are disposed of at an operating, public dumping ground.

Under no circumstances shall the disposal of debris from construction operations create a blemish on the landscape. Material which is to be stockpiled or disposed of off-site shall not encroach on running or intermittent streams, or other waters of the U.S. unless the contractor has obtained the appropriate permits in accordance with applicable state and federal regulations.

Hauling outside of slope staked areas will not be permitted except around concrete structures, structural plate pipe and at locations where topographical or other features render it impractical.

Haul routes outside of slope staked areas shall be as short as practical and shall minimize defacement of or injury to landscape features and vegetation. Such haul routes shall be obliterated and the ground restored to a condition similar to or equal to that existing before such hauling was started.

107.12 Forest Protection:

(A) General:

If a project or a material pit is located on land which is under the jurisdiction of the USDA Forest Services (Forest Service), the contractor shall comply with all applicable State and Federal laws, Federal rules and regulations, and the requirements of the National Forest in which the work is located.

Throughout this subsection, the term Forest Service Officer is used. This person shall be understood to be the District Ranger or any other person authorized or duly appointed to act in all matters affecting National Forest lands and resources. Forest Service Officers for each project, when applicable, will be designated in the Special Provisions.

Additional requirements of the National Forest may be specified in the Special Provisions and may include a clearing plan, a mining plan, and an erosion control and seeding plan.

Unless provided for otherwise in the Special Provisions, the contractor shall comply with the following minimum requirements for activities within the National Forest:

- (1) The contractor shall do everything reasonably within the contractor's power to prevent forest fires and shall not dispose of material by burning without a written permit from the Forest Service.
- (2) The contractor shall not cut timber or brush or commence work in any material pit unless a permit to do so has been obtained from the Forest Service.
- (3) The contractor shall fully repair all damage caused by its operations and provide maintenance commensurate with the contractor's use of National Forest roads and trails.
- (4) The contractor shall fully comply with all requirements regarding air quality.

The Department's publication, Requirements for the Utilization of the Schedule of Equipment Rental Rates for Equipment Used on Force Account Work, will not be applicable when the contractor's equipment is being utilized under the direction of the Forest Service Officer in the suppression of fires.

(B) Fire Plan:

The following outlines the mutual responsibilities of the Forest Service, the Department and the contractor to ensure effective prevention and prompt suppression of all fires within the right-of-way and other work areas.

(1) General:

Fires discovered by the contractor and its employees shall be promptly reported to the Engineer and the Forest Service Officer. The contractor and its employees shall take action on any and all fires within the right-of-way and work areas and within a half-mile zone adjacent thereto. Fires shall be attacked promptly so as to control them while they are small. Fires shall not be abandoned until the Forest Service Officer declares the fire to be out or relieves the contractor and its employees.

The contractor shall place its equipment and employees at the disposal of the Forest Service Officer for the purpose of fighting fires in accordance with this plan.

Equipment will be operated by employees of the contractor. The Forest Service will assume no responsibility toward such equipment for ordinary wear or damage due to negligence, carelessness, or willful misconduct.

(2) Personnel:

The contractor shall provide the Forest Service Officer with a list of the names of key personnel who will act in the matter of fire prevention and fire suppression. The Forest Service Officer will provide the contractor a similar list of names. Each list shall be kept current as to the names, addresses and phone numbers.

(3) Reimbursement:

Reimbursement to the contractor or the contractor's employees for equipment utilized, including operators, will be made by the Forest Service in accordance with rates which have been previously negotiated and agreed upon. These rates will be established prior to mobilization of personnel and equipment to be used for the suppression of fires.

The Forest Service will not reimburse the contractor, subcontractor, or their employees for the suppression of fires started by them.

The contractor and the contractor's employees, in suppressing fires caused by others, including lightning-caused fires, in work areas or within a half-mile zone of work areas will be reimbursed by the Forest Service for such suppression.

In emergencies, the contractor and the contractor's employees may be called upon to suppress fires on other National Forest lands outside the normal half-mile zone. The contractor and its employees will be reimbursed by the Forest Service for such suppression.

If the Forest Service requests that any equipment be made available on standby status, reimbursement to the contractor will be made at a rate established by negotiation.

(4) Tool Cache:

The contractor shall furnish and maintain a tool cache at the active work sites as designated by the Forest Service Officer. Each tool cache shall contain five long-handled (Round Point, size No. 1) shovels, five Mcleod tools and two pulaskis with sheaths. These tools are required separate from, and in addition to, the tools required on equipment.

(5) Vehicles:

All vehicles on the project, except those capable of building fire line and fuel or service trucks, shall have a minimum of one long-handled, size No. 1, round-pointed shovel; one ax or pulaski with sheath; and not less than one 2-1/2 pound capacity, ABC triple class, dry chemical fire extinguisher.

All earth moving equipment, such as dozers and scrapers, shall have a 5-1/2 pound capacity, ABC triple class, dry chemical fire extinguisher.

All service and fuel trucks shall be equipped with a 10-pound capacity, ABC triple class, dry chemical fire extinguisher and one long-handled, size No. 1, round-pointed shovel.

All internal combustion engines, including those on tractors, jammers or any stationary or mobile equipment, shall be equipped with a spark arrester of a type approved by the Forest Service. Heavy equipment equipped with an exhaust driven turbocharger in good working order and with no exhaust bypass will qualify. A straight, mechanically driven supercharger does not qualify. Light trucks up to two-ton, pickups, jeeps, and passenger cars shall have effective mufflers and exhaust pipes comparable to the manufacturer's standard equipment installation.

All internal combustion engine driven vehicles and equipment will be inspected by the Forest Service Officer prior to initial operation. All such vehicles and equipment arriving on the work after the initial inspection shall be reported to the Forest Service Officer for inspection prior to operation. All equipment will be inspected periodically after the initial inspection to insure that spark arresters or turbocharger are in working order. All operators shall submit their equipment to the Forest Service Officer for inspection upon request.

All 1975 and later model passenger vehicles and pickups equipped with a catalytic converter will have a sticker clearly displayed on the dashboard warning the driver of the fire hazard of driving the vehicle over or parking the vehicle where tall grass or other flammable materials can come in contact with the catalytic converter.

The contractor shall make daily inspections of all internal combustion engines, stationary and mobile, to ascertain that spark arresters and mufflers are whole and effective, and that there are no connections that can leak burning particles.

(6) Smoking:

There shall be no smoking while working. This requirement applies to those activities which require that work be performed in an uncleared area, such as clearing and fencing operations. Smoking shall be restricted to areas a minimum of two feet in diameter which have been cleared to mineral soil. All smoking material shall be completely extinguished before leaving these areas.

There shall be no smoking when traveling except when traveling on a graveled, oiled or otherwise surfaced road. Vehicles shall be equipped with ash trays. Smoking material shall be extinguished either in ash trays or on a spot cleared to mineral soil.

All smoking closures or other restrictions which may be put into effect shall be carefully observed.

(7) Chain Saws:

Chain saws shall be equipped with an approved and serviceable spark arrester/muffler. The spark arrester shall be maintained in effective working order, meeting either Department of Agriculture, Forest Service Standard 5100.1a or appropriate Society of Automotive Engineers (SAE) recommended practice J335 and J350 [36 CFR 261.52(j)], as revised to the date of the opening of the proposals.

Power saws shall be filled only in an area which has been cleared to mineral soil. They shall not be started at the place where they have been filled. Mufflers shall be kept in place at all times and the spark arrester screens shall be checked daily. Broken or burned screens shall be promptly replaced.

Power saw operators shall check the sawdust at each tree felled before leaving to make sure that no fires have been started. Each operator shall carry with their power saw a size No. 1, long-handled, round-pointed shovel.

When the fire danger is Manning Class 3 and above, each work area shall be patrolled by the contractor for at least one hour after the cessation of power saw operations.

(8) Burning:

No burning of slash, camp refuse, or other debris or any other burning will be permitted without a daily written permit from the Forest Service and a burn permit issued by the Arizona Department of Environmental Quality, Office of Air Quality.

(9) Fires:

No lunch fires will be permitted except in designated, cleared areas approved by the Forest Service Officer. Any request for lunch fires, warming fires or campfires at an area except those which have been approved shall be made in writing to the Forest Service Officer.

(10) Campsites, Parking and Storage Areas:

Campsites, parking and storage areas on Forest lands shall be approved by the Forest Service Officer prior to use.

All campsites shall comply with all applicable Federal, State, County and City statutes and ordinances concerning safety, health and sanitation. Sites shall be cleared, maintained and used in accordance with Forest Service regulations in order to keep the danger of fires to a minimum. The layout of buildings, tanks, trailers, sanitary facilities, etc., shall be approved by the Forest Service Officer.

All chimneys shall be equipped with half-inch mesh screen for spark arrestors. Fire extinguishers approved by the Forest Service Officer shall be placed in readily accessible places in campsites and storage areas.

No fires except those as may be approved in writing by the Forest Service Officer will be permitted. When required by the Forest Service Officer, the contractor shall maintain a cleared fire line around campsites. Upon cessation of use of the campsite, the contractor shall clean up and restore the site to a condition satisfactory to the Forest Service Officer. Such restoration shall give consideration to the minimizing of erosion.

(11) Welding:

Welding shall be done only at sites which have been cleared to mineral soil. Immediately following welding and metal cutting operations, and before leaving the site, careful inspections shall be made to detect and extinguish smoldering materials. A five- or 10-gallon container of water with pump shall be available to all welding operations.

(12) Blasting:

Electric caps will be required; however, under certain conditions, and with prior approval of the Forest Service Officer, fuse caps may be used. Primer cord shall be understood to be an explosive and not fuse.

(13) Forest Closure:

Fire Manning classes, as established by the Forest Service and based on fire weather and fuel models, will be used by the Forest Service Officer in determining curtailment of operations.

A notification system will be provided to inform the contractor of the predicted Fire Manning class and the fire precautions required. Each day of operation, when there is a predicted change in the Fire Precaution Plan, the Forest Service will inform the contractor between 3:00 and 6:00 p.m. MST of the Numerical Fire Manning class to be followed the next day within the local operation area. The Forest Service will, no later than 9:00 a.m. MST the following day, advise the contractor if conditions have changed from those predicted. The contractor's operations will be governed by the following Fire Prevention Schedule:

Fire Manning Class	Description of Precaution Required
0, 1, 2	Normal Fire Precautions
3	Normal Fire Precautions, except designated areas for smoking and warming or cooking fires require a written permit.
4	Shut down from 12:00 noon until 8:00 p.m. MST all machine treatment of slash, skidding, road pioneering, clearing, and loading. No smoking, warming or cooking fires permitted at any time. Power saws will shut down from 9:00 a.m. until 8:00 p.m. MST. Operations on mineral soil may continue if approved by the Forest Service Officer.
5	Shut down all operations; except operations on mineral soil may continue with special Forest Service permit.
Red Flag Conditions	Total shut down of all operations with everyone to leave the permitted area except the Fire Protection Officer.
Area Closure Proclaimed by Regional Forester	Total shut down of all operations and area closed to entry. Advance notice will be given as soon as area closure appears a reality, followed by a meeting convened to discuss the situation at that

Fire Manning Class

Description of Precaution Required time.

The criteria for establishing the existence of Red Flag Conditions is when sustained high winds are predicted or are occurring. A Red Flag Day identifies those few critical days throughout the fire season that strong winds and low humidity constitute an unusual threat to the national forest resources.

Under unusually severe conditions or with operations that constitute an unusual risk, the Forest Service Officer may institute any or all of the above stipulations, or may require additional action in certain specialized cases.

In specific instances where it can be adequately demonstrated that little or no risk is incurred, the Forest Service Officer may permit certain construction activities to take place under carefully controlled conditions.

107.13 Responsibility for Damage Claims:

The contractor shall indemnify, defend, and hold harmless the State of Arizona, acting by and through the Arizona Department of Transportation, from any and all claims, demands, suits, actions, proceedings, loss, cost and damages of every kind and description, including any attorneys' fees and/or litigation expenses, which may be brought or made against or incurred by the Department on account of loss of or damage to any property or for injuries to or death of any person, to the extent caused by, arising out of, or contributed to, by reasons of any alleged act, omission, professional error, fault, mistake, or negligence of the contractor, its employees, agents, representatives, or subcontractors, their employees, agents, or representatives in connection with or incident to the performance of the work, or arising out of Workmen's Compensation claims, Unemployment Compensation claims, or Unemployment Disability Compensation claims of employees of the contractor and/or its subcontractors or claims under similar such laws or obligations. The contractor's obligation under this subsection shall not extend to any liability to the extent caused by the negligence of the Department, or its employees, except the obligation does apply to any negligence of the contractor which may be legally imputed to the Department by virtue of its ownership or possession of land.

The contractor shall indemnify, defend, and hold harmless any county or incorporated city, its officers and employees, within the limits of which county or incorporated city work is being performed, all in the same manner and to the same extent as provided above.

107.14 Insurance:

Prior to the execution of the contract, the contractor shall file with the Department a certificate or certificates of insurance executed by a company holding a certificate of authority to transact insurance business in the State of Arizona and acceptable to the Department. The certificate of insurance shall be on the form provided by the Department and shall state that with respect to the contract awarded the contractor, the contractor carries insurance in accordance with the requirements of this subsection.

Without limiting any liabilities or any other obligations of the contractor, the contractor shall provide and maintain, if commercially available, the minimum insurance coverage listed below until all obligations under this contract are satisfied:

- (A) General Liability insurance with a minimum combined single limit of \$1,000,000.00 each occurrence applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, independent contractors, products and completed operations. Further, the policy shall include coverage for the hazards commonly referred to as XCU (explosion, collapse and underground). The products and completed operations coverage shall extend for one year past acceptance, cancellation or termination of the work. The policy shall contain a severability of interests provision.
- (B) Comprehensive Automobile Liability insurance with a combined single limit for bodily injury and property of not less than \$1,000,000.00 each occurrence with respect to contractor's owned, hired, or non-owned vehicles, assigned to or used in performance of the work.
- (C) Workers' Compensation insurance to cover obligations imposed by Federal and State statutes having jurisdiction of its employees engaged in the performance of the work, and Employers' Liability insurance with a minimum limit of \$100,000.00. Evidence of qualified self-insured status will suffice for this subsection.

The insurance policy may not have any deductible amounts with respect to the coverage of the Department, except that the Department may approve a deductible amount if the Department has approved the contractor as a self-insurer with respect to the deductible amount, and the contractor has agreed in writing that its self insurance will extend to the deductible amount prior to any other matters.

The policies required by (A) and (B) above shall be endorsed to include the Department, its agents, officials, employees and the State of Arizona as additional insureds with respect to any negligence of the contractor which may be legally imputed to the Department or State, and shall stipulate that the insurance afforded the contractor shall be primary insurance and that any insurance carried by the Department, its agents, officials, employees or the State of Arizona shall be excess and not contributory insurance to that provided by the contractor, as provided by Arizona Revised Statutes Section 41-621(C).

All insurance policies or certificates shall include a requirement providing for 30 days prior written notice to the Department of any cancellation or reduction of coverage. The contractor shall immediately notify the Department and shall cease operations on the occurrence of any such cancellation or reduction and shall not resume operations until the required insurance is in force and new certificates of insurance have been filed with the Department.

The certificate(s) of insurance shall be issued to the Department by the contractor's insurer as evidence that policies providing the required coverages, conditions and limits are in full force and effect. Certificates of insurance shall be addressed as follows:

Arizona Department of Transportation
Contracts and Specifications Section
1651 West Jackson Street, Room 121F
Phoenix, Arizona 85007

Failure on the part of the contractor to produce or maintain required insurance shall constitute a material breach of contract upon which the Department may immediately terminate the contract or, at its discretion, produce or renew such insurance and pay any and all premiums in connection therewith, and all monies so paid by the Department shall be repaid by the contractor to the Department upon demand, or the Department may offset the cost of the premiums against any monies due to the contractor from the State.

The cost of coverage will be considered as included in the contract price. Costs for coverage maintained by the contractor in excess of those required shall not be charged to the Department.

The Department reserves the right to request and receive certified copies of any or all of the above policies and/or endorsements.

The contractor and its insurers providing the required coverages shall waive all rights of recovery against the Department and its agents, officials and employees.

107.15 Contractor's Responsibility for Utility Property and Services:

The contractor's attention is directed to the requirements of Arizona Revised Statutes Section 40-360.21 through .29 requiring all parties excavating in public streets, alleys or utility easements to first secure the location of all underground facilities in the vicinity of the excavation.

The contractor may wish to review copies of existing ADOT permits, subject to availability, prior to start of construction, to assist the contractor in determining the location of any utilities, which the Department may have record of and which are not otherwise identified. Utility locations obtained from the Department are for information only and shall not relieve the contractor of responsibility for identifying, locating and protecting any existing utility lines. Copies of permits may be obtained from the ADOT Area Permit Supervisor in the District in which a project is located.

At points where the contractor's operations are adjacent to properties of railway, telegraph, telephone, water, sewer, electric, gas and cable television companies, hereinafter referred to as utilities, or are adjacent to other facilities and property, damage to which might result in considerable expense, loss, inconvenience, injury or death, work shall not be commenced until all arrangements necessary for the protection thereof have been made.

The contractor shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations in order that these operations may progress in a reasonable manner, that duplication of rearrangement work may be reduced to a minimum and that services rendered by these parties will not be unnecessarily interrupted.

The contractor shall contact the owners of the various utilities prior to the start of construction and shall obtain from them any information pertaining to existing utilities that will either supplement information shown on the project plans or will correct any such information that may be incorrect. The contractor shall furnish the Engineer with evidence that the contractor has contacted the utility companies and shall furnish the Engineer with a copy of the information furnished it as a result of such contacts.

If the contractor learns from either the owner of the utility or from any other source of the existence and location of properties of railway, telegraph, telephone, fiber optics cable, water, sewer, electric, gas and cable television companies either omitted from or shown incorrectly on the project plans, the contractor shall immediately notify the Engineer and shall not disturb the utilities. Relocation or adjustment of such utilities, if deemed necessary, will be either performed by others or shall be performed by the contractor in accordance with the provisions of Subsection 104.02.

The exact locations and depths of all utilities that are underground or the location of those on or near the surface of the ground which are not readily visible shall be determined. Such locations shall be marked in such a manner so that all workmen or equipment operators will be thoroughly apprised of their existence and location. It will be the contractor's responsibility to see that every effort possible has been made to acquaint those actually involved in working near utilities not only with the type, size, location and depth, but with the consequences that might follow any disturbance. No trenching or similar operation shall be commenced until the Engineer is satisfied that every possible effort has been taken by the contractor to protect utilities.

When the operations of the contractor result in any damage to any utility line or service connection, the location of which has been brought to the contractor's attention, the contractor shall assume full responsibility for such damage.

In the event of interruption to water or utility services as a result of accidental breakage or as a result of lines being exposed or unsupported, the contractor shall promptly notify the proper authority and shall cooperate with the said authority in the restoration of service. When service is interrupted, repair work shall be continuous until the service is restored. No work shall be undertaken around fire hydrants until provisions for continued service have been approved by the local fire authority.

Temporary or permanent relocation or adjustment of any utility line or service connection desired by the contractor for its convenience shall be its responsibility. The contractor shall obtain the approval of both the Engineer and the utility company and upon approval shall make all necessary arrangements with the utility company and shall bear all costs in connection with such relocation or adjustment.

In carrying out any of the provisions of these specifications or in exercising any power or authority granted to them by or within the scope of the contract, there shall be no liability upon the Transportation Board and any member thereof, the Director, the Engineer, or their authorized representatives, either personally or as officials of the State, it being understood that in all such matters they act solely as agents and representatives of the State.

107.17 No Waiver of Legal Rights:

Partial or final acceptance pursuant to Subsection 105.20 shall not preclude or prohibit the Department from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the Department be precluded or prohibited from recovering from the contractor, or its surety, insurance or any combination thereof, such overpayment as it may sustain, or by failure on the part of the contractor to fulfill his obligations under the contract. A waiver on the part of the Department of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The contractor, without prejudice to the terms of the contract, shall be liable to the Department for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards to the Department's rights under any warranty or guaranty.

107.18 Contractor and Subcontractor Records:

The contractor, subcontractors and all suppliers shall keep and maintain all books, papers, records, files, accounts, reports, bid documents with backup data, including electronic data, and all other material relating to the contract and project for five years following completion and acceptance of the work.

All of the above material shall be made available to the Department for auditing, inspection and copying and shall be produced, upon request, at the Department offices located at 206 South 17th Ave., Phoenix, Arizona 85007.

The contractor shall insert the above requirement in each subcontract, purchase order and lease agreement and shall also include in all subcontracts a clause requiring subcontractors to include the above requirement in any lower-tier subcontract, purchase order or lease agreement.

SECTION 108 PROSECUTION AND PROGRESS:

108.01 Subletting of Contract:

The contractor shall not sublet, sell, transfer, assign or otherwise dispose of the contract or contracts or any portion thereof or of the contractor's right, title or interest therein without written consent of the Engineer. In case such consent is given, the contractor will be permitted to sublet a portion thereof, but shall perform with the contractor's own organization work amounting to not less than 40 percent of the original contract amount. No subcontracts or transfer of contract shall release the contractor of its liability under the contract and bond.

"Contractor's own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by it, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

The contract amount upon which the 40-percent requirement is computed includes the cost of materials and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

A person who has been convicted of a violation of Arizona Revised Statutes Section 34-252 is not eligible to enter into any contract either as a contractor, subcontractor or supplier, for a period of up to three years, from date of conviction, as determined by the court. A person means any individual, partnership, corporation, association or other entity formed for the purpose of doing business as contractor, subcontractor or supplier.

The Department may also refuse to approve any entity as a subcontractor or supplier for any of the reasons for which it could refuse to issue the entity a proposal pamphlet, suspend the entity from bidding, or declare the entity non-responsible.

The Department's consent to a subcontract will be given only after the Department determines that the subcontract, purchase order, or lease agreement is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. The following data shall be submitted seven calendar days prior to the start of each subcontractor's work, except data regarding DBE subcontracts must be submitted at the preconstruction conference.

- (A) A complete copy of each subcontractor agreement and each second tier subcontractor.
- (B) Verification that all required Federal Provisions; i.e., Federal Form 1273, Executive Order, and Wage Determination Decisions are attached to each subcontract in any federal-aid funded contract.
- (C) Subcontracts must show the total price subcontracted. The items of work, and quantities of each item subcontracted shall be shown. Unit Prices or Extended Prices may be deleted except in the case of DBE subcontractors.
- (D) DBE subcontracts shall include full extensions of all unit prices.
- (E) Partial items shall be explained in detail and show the amount of each contract item being subcontracted. Non-contract item work shall be fully explained, i.e., Trucking 1,000 hours, Truck Asphaltic Concrete.
- (F) The contractor shall certify to the Department that all of its subcontractors have all required registrations.

The Engineer will not consent to subletting of any portion of the contract if a copy of the subcontract or lower tier subcontract is not received. The Engineer's consent shall in no way be construed to be an endorsement of the subcontractor or its ability to complete the work in a satisfactory manner.

Calculation of the 60 percent subcontracting limit will be based upon the amount of work subcontracted and verified by subcontract documents.

Subcontractors performing contracting work subject to Arizona Revised Statutes Sections 32-1101 et seq. shall be duly licensed in accordance with those statutes. Subcontractors providing other services shall be licensed in accordance with the requirements of Arizona Law.

108.02 Start of Work:

Work shall not be started until the contract has been executed by both the contractor and the Department.

The contractor shall begin work within the number of calendar days after the date of notice of award of contract as follows:

Contract Size (Dollars)	Calendar Day Period
0 - 10,000,000	30
over 10,000,000	45

When the contract time is on a calendar day basis or on a working day basis, contract time will be charged commencing on the date 30 or 45 calendar days, as determined by the contract size, after the date of the notice of award letter. Should this date fall on a Saturday, Sunday or holiday, the next working day shall be considered the starting date for the purpose of charging contract time.

108.03 Preconstruction Conference:

The contractor shall meet with the Engineer for a preconstruction conference prior to commencing work. The conference may be combined with the partnering conference, and all requirements of this subsection may be submitted at that time. Should both conferences be held at the same time, the partnering conference will be held first.

At the preconstruction conference the contractor shall submit a progress schedule showing the order in which the contractor proposes to carry out the work, the dates on which the contractor and its subcontractors will start the salient features of the work, including procurement of materials, equipment, etc.; the ordering of articles of special manufacture; the furnishing of drawings, plans and other data required under Subsection 105.03 for the review and approval of the Engineer; the inspection of structural steel fabrication; and the contemplated dates for the completion of the said salient features. The schedule may be in a bar chart format or a critical path method format. No schedule activity shall be shorter than one day or longer than 15 working days. The schedule must show interrelationships among the activities, and the controlling items of work throughout the project shall be

identified. If requested by the Engineer, the contractor shall furnish information needed to justify activity time durations. Such information shall include estimated manpower, equipment, unit quantities, and production rates. The schedule shall illustrate the completion of the work not later than the contract completion date.

The contractor shall furnish authorized signature forms and a list of the contractor's proposed subcontractors and major material suppliers.

Progress schedules shall have considered the time requirement for ordering articles of special manufacture to meet specific requirements of the work and Subsection 604-3.04 when structural steel fabrication inspection is required.

If the contract requires trainees on the project, the contractor shall submit a schedule showing the number of trainees, the hours and the work items for which trainees will be used.

If the contract has a DBE requirement, the contractor shall submit copies of completed and signed DBE subcontracts, purchase orders, or invoices to the Department.

The contractor shall submit a traffic control plan in accordance with Subsection 701-1. The contractor shall designate an employee who is competent and experienced in traffic control to implement and monitor the traffic control plan. The qualifications of the designated employee must be satisfactory to the Engineer.

The contractor shall submit a safety plan and designate an employee as Safety Supervisor, in accordance with Subsection 107.08.

Both plans must be satisfactory to the Engineer.

During the preconstruction conference, the Engineer will designate a Department employee or employees who will be responsible to see that the traffic control plans and any alterations thereto are implemented and monitored to the end that traffic is carried through the work in an effective manner. If approved by the Engineer, the contractor may designate one employee to be responsible for both the traffic control and safety plans. The contractor shall not designate its superintendent as the responsible person for either the traffic control plan or the safety plan, unless approved by the Engineer.

If the project requires that contractor or State personnel to work from falsework, within shoring, or in any other hazardous area the contractor shall submit as part of the contractor's safety plan specific measures it will use to ensure worker safety.

The contractor shall also submit a program for erosion control and pollution prevention, as set forth in Subsection 104.09, on all projects involving clearing and grubbing, earthwork, structural work, or other construction, when such work is likely to create erosion or pollution problems.

If the contractor fails to provide the required submissions, the Engineer may order the preconstruction conference suspended until such time as they are furnished. Work shall

not begin until the preconstruction conference has been concluded and the safety plan has been approved, unless authorized by the Engineer. The contractor shall not be entitled to additional compensation or an extension of contract time resulting from any delays due to such a suspension.

When the specifications require specific quality control measures for certain materials by referencing Subsection 106.04(C), the contractor shall designate a qualified employee as Quality Control Manager. The Quality Control Manager shall be responsible for the implementing and monitoring of the quality control requirements described in Subsection 106.04(C).

108.04 Prosecution and Progress:

The contractor shall start the work in accordance with the requirements of Subsection 108.02. The contractor shall notify the Engineer at least 24 hours before beginning work.

Unless suspended, the work shall be diligently and continuously carried on to completion and the contractor agrees to provide at all times an adequate force of labor and sufficient materials and equipment to insure the completion of the contract within the time allowed. The progress of the work shall be at a rate sufficient to complete the contract in an acceptable manner within the time allowed.

At a mutually convenient location and time, the contractor shall meet weekly with the Engineer to discuss construction activities; however, a meeting may be waived if mutually agreed to, due to weather conditions, work progress, or for other reasons. At the meetings, the contractor shall provide the Engineer with a detailed, written schedule of all construction activities and phases of work for the forthcoming two week period. This written schedule shall detail the start and anticipated completion dates of major phases of work as well as indicate the status of major ongoing activities. Minutes of the weekly meetings will be kept by the Engineer and a copy given to the contractor. Failure to provide an accurate, appropriate schedule may be grounds for the suspension of the work.

Schedule changes requiring an increase in the Department's engineering personnel will not be put into effect for 10 days after the submission of weekly schedules detailing such activities, or until the Engineer has made arrangements for additional personnel, whichever is the shorter time.

Every 60 days throughout the contract, or at any other time as requested by the Engineer, the contractor shall submit a revised progress schedule reflecting the actual progress of activities, all activity logic revisions, the anticipated completion dates of the major phases of work remaining, and the anticipated completion date of the work.

108.05 Limitation of Operations:

The contractor shall conduct the work at all times in such a manner and in such sequence as will insure the least interference with traffic and the safety of the public and the protection of the workmen. It shall have due regard to the location of detours and to the provisions for handling traffic. It shall not open up work to the prejudice or detriment of work

already started. The Engineer may require the contractor to finish a section of work which is in progress before work is started on any additional sections if the opening of such section is essential to public convenience.

Except as required to protect work already accomplished, to provide dust control and for work of a similar nature, no work on Sundays or holidays will be permitted unless written permission is obtained from the Engineer. The contractor shall advise the Engineer at least 24 hours in advance if the contractor elects to work on any Saturday, Sunday or holiday.

In general, all work shall be performed during daylight hours. If the contractor elects to perform work at night or if the contractor is required to do so in the Special Provisions, the contractor shall furnish, erect and maintain an amount of artificial lighting sufficient for the construction, flagging, inspection, etc. and for the safety of the workers and the traveling public. No night work shall be performed until the Engineer is satisfied that an adequate amount of artificial light has been furnished and placed properly.

108.06 Character of Workers:

The contractor shall at all times employ sufficient labor and equipment for prosecuting the several classes of work to fulfill completion in the manner and within the time required by these specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform all work properly and satisfactorily.

Any person employed by the contractor or by any subcontractor who, in the opinion of the Engineer, does not perform the contractor's work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the Engineer, be removed immediately by the contractor or subcontractor employing such person and shall not be employed again in any portion of the work without the approval of the Engineer.

Should the contractor fail to remove such person or persons as required above or fail to furnish suitable and sufficient personnel for the proper prosecution of the work, the Engineer may suspend the work by written notice until compliance.

108.07 Methods and Equipment:

All equipment which is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet the requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the project shall be such that no damage to the roadway, adjacent property or other highways will result from its use.

When the construction methods and types of equipment to be used by the contractor in accomplishing the construction are not set forth in the contract, the contractor may use any methods or equipment that it demonstrates to the satisfaction of the Engineer will accomplish the contract work in conformity with the requirements of the contract.

When the contract specifies that the construction be performed by the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Engineer. If the contractor desires to use a method or type of equipment other than those specified in the contract, it may request authority from the Engineer to do so. The request shall be in writing and shall include a full description of the method and equipment proposed to be used and an explanation of the reasons for desiring to make the change. If approval is given, it will be on the condition that the contractor shall be fully responsible for producing construction work in conformity with the contract requirements. If after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not meet contract requirements, the contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining construction with the specified methods and equipment. The contractor shall either remove the deficient work or replace it with work of specified quality or take such other corrective action as the Engineer may direct.

108.08 Determination and Extension of Contract Time:

The Contract Time, as defined in Section 101, will be stated in the Special Provisions.

When the contract time is on a working day basis, the Engineer will furnish the contractor a weekly statement showing the number of days charged to the contract for the preceding week and the number of days specified for completion of the contract. The contractor will be allowed one week after the contractor has received the statement in which to file a written protest with the Engineer setting forth in what respect such weekly statement is incorrect; otherwise the statement shall be deemed to have been accepted by the contractor as correct.

When the contract time is on a calendar day basis, it shall consist of the number of calendar days stated in the contract counting from the starting date and including all Sundays, holidays and non-work days. All calendar days elapsing between the effective dates of any orders of the Engineer to suspend work and to resume work for suspensions not the fault of the contractor will be excluded.

When the contract completion time is a fixed calendar date, this date shall be the date on which all work on the project is required to be substantially complete.

Contract time is based on the amount of work included in the original contract. If satisfactory fulfillment of the contract involves alterations to the contract that affect the contractor's completion time, the contractor may request a supplemental agreement which extends the contract time. Such request will be made in accordance with Subsection 104.03, shall be in the form of a Request for Extension of Contract Time, and shall include the contractor's revised schedule and all other pertinent data. The request shall show why an increase of contract time is warranted.

An extension of contract time will not be considered unless the work affected is a controlling item on the contractor's schedule at the time of the alteration or becomes a controlling item as a result of the alteration.

If a nationwide shortage exists in basic materials or standard items which are necessary in the fabrication or manufacture of equipment, parts or articles to meet the specific requirements of the project, a serious widespread shortage of such equipment, parts or articles may be considered as a valid reason for the extension of contract time. Delivery delays or shortages caused by ordinary supply fluctuations are not nationwide shortages and therefore are not valid reasons for extension of time.

The contractor's plea that insufficient time was specified is not a valid reason for extension of time.

If the contractor requests additional time and if the Engineer finds that the work activities controlling overall job progress and the projected completion date were delayed because of conditions beyond the control and without the fault of the contractor, and could not have been anticipated by the contractor, the Engineer may extend the time for completion in such amount as the conditions justify. The extended time for completion shall then be in full force and effect the same as though it were the original time for completion.

When substantial completion has been duly determined by the Engineer in accordance with the requirements of Subsection 105.19, the daily time charge will cease.

108.09 Failure to Complete the Work on Time:

For each calendar day or working day, as specified, that the contractor shall fail to achieve substantial completion after the contract time or calendar date specified for the completion of the work provided for in the contract, the sum shown in the schedule of liquidated damages specified below will be deducted from any monies due the contractor, not as a penalty, but as liquidated damages; provided, however, that due account will be taken of any adjustment of the contract time for the completion of the work allowed under the provisions of Subsection 108.08.

Permitting the contractor to continue and finish the work or any part of it after the time fixed for its completion or after the date to which the time for completion may have been extended will in no way operate as a waiver on the part of the Department of any of its rights under the contract.

SCHEDULE OF LIQUIDATED DAMAGES			
Original Contract Amount		Liquidated Damages Per Day	
From More Than:	To and Including:	Calendar Day or Fixed Date:	Working Day:
\$ 0	\$ 100,000	\$ 350	\$ 500
100,000	500,000	490	700
500,000	1,000,000	840	1,200
1,000,000	2,000,000	910	1,300
2,000,000	5,000,000	1,190	1,700
5,000,000	10,000,000	1,540	2,200
10,000,000	-----	2,380	3,400

108.10**Termination of Contract for Default:**

If the contractor:

Fails to begin the work under the contract within the time specified, or

Fails to perform the work with sufficient workers and equipment or with sufficient materials to insure the prompt completion of said work, or

Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or

Discontinues the prosecution of the work, or

Fails to resume work which has been discontinued within a reasonable time after notice to do so, or

Becomes insolvent, or

Allows any final judgment to stand against it unsatisfied for a period of 10 days, or

Makes an "assignment for the benefit of creditors," or

Fails to comply with contract requirements regarding minimum wage payments or equal employment opportunity requirements, or

Is a party to fraud, or

For any other cause whatsoever, fails to carry on the work in an acceptable manner, the Engineer will give notice in writing to the contractor and to the contractor's surety of such delay, neglect or default.

If the contractor or the contractor's surety within a period of 10 days after such notice shall not proceed in accordance therewith, the Department will, upon written notification from the Engineer of the fact of such delay, neglect or default and the contractor's failure to comply with such notice, have full power and authority without violating the contract to terminate the contract. The Department may appropriate or use any or all materials and equipment on the ground as may be suitable and acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof or use such other methods as in the opinion of the Engineer will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the Department, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due said contractor. If such expense exceeds the sum which would have been payable under the contract, then the contractor and the contractor's surety shall be liable and shall pay to the Department the amount of such excess.

If it is determined, after termination of the contractor's right to proceed, that the contractor was not in default, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Department in accordance with Subsection 108.11. Thus, damages to which a contractor may be entitled as a result of an improper default termination will be limited to the amounts provided for in Subsection 108.11.

108.11 Termination Of Contract for Convenience of the Department:

The Department may terminate the entire contract or any portion thereof, if the Engineer determines that a termination is in the Department's best interest. The Engineer will deliver to the contractor a Written Order of Termination specifying the extent of termination and the effective date.

(A) Submittals and Procedures:

After receipt of a Written Order of Termination the contractor shall immediately proceed with the following obligations:

- (1) Stop work as specified in the notice.
- (2) Place no further subcontracts for orders or materials, services, equipment or facilities, except as necessary to complete the continued portion of the contract.
- (3) Terminate all subcontracts or orders for materials, services, equipment or facilities to the extent they relate to the work terminated.
- (4) Transfer title and deliver to the Department
 - (a) the fabricated, partially fabricated, or unfabricated parts; work in process; completed work; supplies; and other material produced or acquired for the work terminated, and
 - (b) the completed or partially completed plans, drawings, information, and other property that, if the contract had been completed, would be required to be furnished to the Department.
- (5) Take any action necessary, or that the Engineer may direct, for the protection and preservation of the property related to the contract that is in the possession of the contractor and in which the Department has or may acquire an interest.
- (6) Complete performance of the work not terminated.

(B) Inventory:

Acceptable materials obtained by the contractor for the project that have not been incorporated in the work shall be inventoried in conjunction with the Engineer at a date identified by the Engineer.

(C) Settlement Provisions:

When the Department orders termination of all or a part of the contract effective on a certain date, completed items of work as of that date will be paid for at the contract bid price. Payment for partially completed work or for items that are eliminated in their entirety will be made either at agreed prices or under the provisions below.

(1) Additional Costs:

Within 60 calendar days of the effective termination date the contractor shall submit a claim to the Engineer for additional damages or costs not covered above or elsewhere in the contract. Such claim may include such cost items as reasonable idle equipment time, mobilization efforts, bidding and project investigative costs, overhead expenses attributable to the project terminated, legal and accounting charges involved in claim preparation, subcontractor costs not otherwise paid for, actual idle labor cost if work is stopped in advance of termination date, guaranteed payments for private land usage as part of the original contract, and any other cost or damage for which the contractor feels reimbursement should be made. Anticipated profits will not be considered as part of any settlement.

The contractor and the Department may agree upon the whole or any part of the amount to be paid because of the termination. The amount may include a reasonable allowance for profit on work done. The agreed amount may not exceed the total contract price as reduced by the amount of payments previously made, and the contract price of work not terminated. The contract shall be amended, and the contractor paid the agreed amount.

(2) Additional Cost Review:

If the contractor and the Department fail to agree on the whole amount to be paid the contractor because of the termination of work, the Department will pay the amounts determined as follows, but without duplication of any amounts agreed upon above:

- (a) For contract work performed before the effective date of termination, the actual and reasonable costs of work performed and inventoried materials, plus a reasonable profit thereon, not to exceed unit bid prices.
- (b) The reasonable costs of settlement of the work terminated, including:
 - 1) Accounting, legal, clerical, and other expenses reasonably necessary for the preparation of termination settlement Proposals and support data;

- 2) The termination and settlement of subcontracts and orders for materials, services, equipment and facilities; and
 - 3) Storage, transportation, and other costs incurred, as reasonably necessary for the preservation, protection, or disposition of the termination inventory.
- (c) Except for normal spoilage, and to the extent that the Department expressly accepts the risk of loss, Department will exclude from the fair value, all that is destroyed, lost, stolen, or damaged so as to become undeliverable to the Department or to the buyer.
- (d) In arriving at the amount due the contractor under this clause, the Department will deduct:
- 1) All unliquidated advance or other payments to the contractor under the terminated portion of the contract;
 - 2) Any claim that the Department has against the contractor under the contract; and
 - 3) The agreed price for, or the proceeds from the sale of materials, supplies, or other things acquired and sold by the contractor not recovered by or credited to the Department.

If the termination is partial, the contractor may file a Proposal with the Department for an equitable adjustment of the price(s) of the continued portion of the contract. The Department will make any equitable adjustment agreed upon. Any proposal for an equitable adjustment under this clause shall be requested within 90 calendar days from the effective date of termination unless extended in writing by the Engineer.

The Department may, under the terms and conditions it prescribes, make partial payments and payments against costs incurred by the contractor for the terminated portion of the contract, if these payments will not exceed the amount to which the contractor is entitled.

The contractor shall maintain and make available all project cost records to the Department for audit to the extent necessary to determine the validity and amount of each item claimed. This includes all books and other evidence bearing on the contractor's costs and expenses under the contract. These records and documents shall be made available to the Department at the contractor's office, at all reasonable times, without any direct charge. If approved by the Department, photographs, microphotographs, or other authentic reproductions may be maintained instead of original records and documents.

Termination of the contract or portion thereof shall not relieve the contractor of contractual responsibilities for the work completed, nor shall it relieve the Surety of its obligation for and concerning any just claim arising out of the work performed.

SECTION 109 MEASUREMENT AND PAYMENT:

109.01 Measurement of Quantities:

All work completed under the contract will be measured by the Engineer according to United States standard measures.

A station when used as a definition or term of measurement will be 100 hundred linear feet.

The methods of measurement and computation to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

All items which are to be measured on an area basis will, unless otherwise specified, be measured by longitudinal and transverse measurements made along the surface area in such manner as to ascertain reasonably the true area of the item actually placed in accordance with contract requirements. No deductions will be made for individual fixtures having an area of nine square feet or less.

Structures will be measured according to neat lines shown on the project plans or as altered to fit field conditions.

Unless otherwise specified, all items which are to be measured by the linear foot will be measured along or parallel to the longitudinal axis of that item in such manner as to ascertain reasonably the true length of the item.

In computing volumes of earthwork the average end area method or other acceptable methods will be used. Corrections will not be made for curvature, prismatic corrections and similar refinements unless specified.

The nominal diameter of wire, and the thickness of plates and sheets used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fractions of inches.

The wire size in welded wire fabric used for concrete reinforcement will be identified by a W number directly corresponding to the cross-sectional area of the wire in hundredths of a square inch.

The term "ton" will mean the short ton consisting of 2,000 pounds avoirdupois. All materials which are measured or proportioned by weight shall be weighed on accurate approved scales.

Where the specifications require scales for the determination of weight, the use of load cells and electronic digital readout will be acceptable for all applications. The weighing system shall conform to and be maintained in accordance with the requirements of the Department of Weights and Measures.

When using platform scales, materials shall be weighed by or under the inspection of Department personnel. When using hopper scales, Department personnel may weigh or

inspect materials to be measured for payment. Inspection of weigh operations may be performed by the Engineer at any time.

Scales of acceptable size shall be furnished by the contractor and shall be sealed by an inspector of the Department of Weights and Measures, State of Arizona, or a Licensed Service Agency approved by the State of Arizona Department of Weights and Measures. The Licensed Service Agency certifying the scales shall not be affiliated with the contractor or company supplying the materials for payment by weight.

During weighing operations, weights will be read and recorded to the nearest 100 pounds. The gross, tare, and net weights of each load will be recorded and documented with all or part of the following information as applicable to the type of scales and recording system used:

- Project Identification
- Contract Item Number
- Material Source/Plant Identification
- Date
- Load Number
- Truck Identification
- Time of Weighing
- Applicable Weights
- Weighperson's Signature

Scales shall be resealed as often as required to assure accurate weights; scales shall be resealed at least once every 365 calendar days. The contractor shall also provide with each scale at least twenty 50-pound certified weights to be used in checking the scale. Each weight shall be recertified one year from the date of previous certification by the Department of Weights and Measures Metrology Laboratory. Each weight shall be stamped with a number, and the contractor shall furnish a certificate showing the numbers of the weights and the dates of certification. Certification will be obtained from the Department of Weights and Measures Metrology Laboratory.

Tests conducted by the Engineer to check the accuracy of scales shall not relieve the contractor of the responsibility of maintaining the accuracy of the scales.

No measurement or direct payment will be made for all of the measures hereinbefore described taken to seal scales, provide and certify weights and to weigh materials.

Each platform scale installation shall be provided with a shelter for the scale operator. The shelter shall be weatherproof and shall be provided with adequate ventilation, light, a stool and a work bench.

The contractor shall provide means for heating or cooling the shelter to a reasonably comfortable degree if the work is in progress during cold or hot weather. The approximate minimum dimensions for the shelter shall be six feet in width, eight feet in length and seven feet in height.

Trucks used to haul material being paid for by weight shall be weighed empty at least once daily and at such other times as the Engineer directs, and each truck shall bear a plainly legible identification mark.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Engineer, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity.

When requested by the contractor and approved by the Engineer in writing, material specified to be measured by the cubic yard may be weighed and such weight will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer and shall be agreed to by the contractor before such method of measurement of pay quantities is used.

Bituminous materials will be measured either by the gallon or by the ton.

Volumes will be measured at 60 degrees F or will be corrected to the volume at 60 degrees F in accordance with the requirements of Table 1005-5 for asphalts or ASTM D 633 for tars.

Emulsified asphalt will be converted from volume to weight by using a factor of 240 gallons per ton, regardless of temperature.

Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted or otherwise not incorporated into the work.

When bituminous materials are shipped by truck or rail, net certified weights or volume subject to correction for loss or foaming, may be used for computing quantities.

Cement will be measured by the ton or the hundredweight.

Timber will be measured by the 1,000 feet board measure, M.F.B.M., actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.

The term "lump sum" when used as an item of payment will mean complete payment for the work described in the proposal.

When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by unit weight, section

dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

109.02 Scope of Payment:

The contractor shall accept the compensation provided in the contract as full payment for furnishing all labor, materials, tools, equipment, and incidentals necessary to the completed work and for performing all work contemplated and embraced under the contract; also for loss or damage arising from the nature of the work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the acceptance by the Department and for all risks of every description connected with the prosecution of the work; also for all expenses incurred in consequence of the suspension or discontinuance of the work as provided in the contract; and for completing the work according to the plans and specifications. Neither the payment of any estimate nor of any retained percentage shall relieve the contractor of any obligation to make good any defective work or material.

No compensation will be made in any case for loss of anticipated profits.

If the "Basis of Payment" clause in the specifications relating to any unit price in the bidding schedule requires that the said unit price cover and be considered compensation for certain work or material essential to the item, this same work or material will not also be measured or paid for under any other pay item which may appear elsewhere in the specifications.

109.03 Compensation for Altered Quantities:

When the accepted quantities of work vary from the quantities in the bid schedule, the contractor shall accept as payment in full, payment at the original contract unit prices for the accepted quantities of work. No adjustments in the contract unit prices will be allowed, except as provided by Subsection 104.02. Under no circumstances will a modification of contract unit prices be made for loss of expected reimbursement or loss of anticipated profits suffered or claimed by the contractor resulting either directly from such alterations or indirectly from unbalanced allocation among the contract items of overhead expense on the part of the bidder and subsequent loss of expected reimbursement or from any other cause.

109.04 Adjustments in the Contract Price:

Adjustments in the contract price may be made only by Supplemental Agreement. The contract price adjustments set forth in a Supplemental Agreement must be determined in accordance with this subsection. Efforts to establish the calculation of the contract price adjustment must be accomplished in the order set forth in this subsection.

(A) Letter Agreement for Alterations of \$5,000 or Less:

When the Department makes alterations in the details of construction or specifications that are limited in scope to the extent that the cost of the alterations will not exceed \$5,000.00 the Engineer and the contractor may reach agreement upon the scope of work and a lump

sum amount to cover the cost of the work to be performed. This agreement shall be reflected in a letter from the Engineer to the contractor, which, when executed by both parties, shall have the same force and effect as a supplemental agreement. Work shall not proceed until both parties have signed the agreement. This work will be paid for under ITEM 9240101 - Miscellaneous Work, at the lump sum amount agreed upon, which item will not be a part of the Bidding Schedule, but will be established by the Engineer through the initial letter agreement.

(B) Unit Prices:

Should paragraph (A) not apply, an attempt must be made, before proceeding to any other pricing method, to price the work described by the Supplemental Agreement in accordance with the unit prices provided for each bid item.

(C) Detailed Estimate:

If agreement cannot be reached by the Engineer and contractor to price the Supplemental Agreement in accordance with the unit prices provided for bid items, then the contractor must provide a detailed estimate of its proposed unit prices or lump sum amount to perform the work described in the Supplemental Agreement. This detailed estimate must include the following:

- (1) Estimate of labor effort by trade in manhours for each task.
- (2) Estimate of base labor and burdened labor rate.
- (3) Estimate of equipment cost including time requirements and rate.
- (4) Estimated cost of materials.
- (5) Estimated cost to be expended by subcontractors, prepared to the same level of detail as required in items (1) through (4) above.
- (6) Any other costs to which the contractor feels it is entitled. Each such cost shall be presented in detail similar to items (1) through (5) above.
- (7) Mark-up percentage, if used, for overhead, profit, or bond. The maximum allowable markup for the prime contractor shall be 15 percent for work performed by the prime contractor and 5 percent for work performed by subcontractors. The maximum allowable markup for the subcontractor is 15 percent, but in no event will the cumulative amount paid to the prime contractor and subcontractors for overhead, profit or other markups for any work exceed 20 percent of the estimate set forth in (1) through (4) above.

The contract price adjustment shall be based on the actual cost to the contractor as determined in (C)(1) through (C)(7) above, rather than on a force account basis, whenever possible.

The contractor will be allowed 10 calendar days to prepare such a cost estimate. Direction to proceed with the work described in the Supplemental Agreement will not be provided to the contractor by the Engineer until a detailed estimate is provided. The contractor will not be entitled to an adjustment in the contract price or time for the time required to prepare and submit a detailed cost estimate.

Upon receipt of the contractor's estimate, the Engineer will immediately schedule negotiations. Should such negotiations be conducted and a contract price adjustment not be agreed upon, the Engineer will consider the performance of the work on a force account basis, although the Engineer may at any time direct the contractor to proceed with the work on a force account basis.

(D) Force Account:

If directed by the Engineer, work required by Supplemental Agreement may be performed on a force account basis. Such work will be compensated in the following manner:

(1) Labor:

For all labor, including foreman in direct charge of specific operations, but excluding general superintendence, the contractor will be paid:

- (a) Regular pay (RP) which will be determined as follows:

$$RP = (WR + FR) \times 1.5$$

Where:

WR = hourly wage rate as determined by payroll

FR = fringe benefit rate as determined by payroll

The contractor shall provide the hourly wage rates and fringe benefit rate at the preconstruction conference. The rates will be verified by comparison to the contractor's payrolls.

- (b) Overtime pay (OT) which will be determined as follows:

$$OT = [(WR \times 1.5) + FR] \times 1.5$$

- (c) Subsistence and travel allowances paid to workers as required by collective bargaining agreements.

(2) Materials:

For all materials accepted by the Engineer and used in the work, the contractor will be paid the actual invoice cost of such materials including actual freight and express charges less

all offered or available discounts and rebates, notwithstanding the fact that they may not have been taken by the contractor. To the above cost will be added a sum equal to 15 percent thereof.

The Department reserves the right to furnish such materials as it deems appropriate, and the contractor shall have no claims for any costs, overhead or profit on materials provided by the Department.

No partial payment will be allowed. The contractor shall be compensated for materials after the materials invoice is submitted along with any documentary backup for the cost of materials.

(3) Equipment:

Equipment which the Engineer considers necessary for the performance of work will be eligible for payment at the established rates only during the hours that it is operated except as otherwise allowed elsewhere in these specifications. Equipment hours will be recorded to the nearest one-half hour. For the use of equipment owned by the contractor and approved by the Engineer, the contractor will be paid the rental rates, as modified herein, set forth in the Rental Rate Blue Book (RRBB) for Construction Equipment which is published by the Equipment Guide-Book Company, a division of Nielson - Dataquest, 1290 Ridder Park Drive, San Jose, California 95131, Phone (800) 669-3282. All rate determinations will be based on the Blue Book rental rate chapter revisions that are applicable at the time the equipment is being used.

(a) Rental Rates (Without Operators):

The hourly equipment rental rate (HERR) will be determined by the following formula:

$$HERR = F \times \left[\frac{1.15 \times R}{176} \right] + HOC$$

Where:

F = Adjustment factor to R as shown in the Special Provisions.

R = Current RRBB Monthly Rate

HOC = Hourly operating cost

An overhead and profit adjustment of 15 percent of the rates provided in the Rental Rate Blue Book is included in the above formula.

The hourly operating cost represents the major costs of equipment operation, such as fuel and oil, lubrication, field repairs, tires, expendable parts and supplies.

For each piece of equipment used, whether bought or rented, the contractor shall provide the Engineer with the following information: the manufacturer's name, equipment type, year of manufacture, model number, type of fuel used, horsepower rating, attachments required, together with their size or capacity and any further information necessary to ascertain the proper rate.

When multiple attachments are included with the rental equipment, only the attachment having the higher rental rate will be eligible for payment, provided the attachment has been approved by the Engineer as being necessary to the force account work.

Rental charges will not be allowed for tools or equipment that show a daily rate less than five dollars or for unlisted equipment that has a value of less than four hundred dollars.

The above provisions apply to approved equipment of modern design and in good working condition. The equipment shall be handled and used to provide normal output or production. Equipment that is not in good working condition or is not of proper size for efficient performance of the work may be rejected by the Engineer. Equipment ordered for force account work will be paid for until such time as the Engineer directs that the use of such equipment be discontinued or until completion of the work.

Unless otherwise specified, manufacturer's ratings and manufacturer-approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

If it is deemed necessary by the Engineer to use equipment not listed in the above publication, a suitable rate for such equipment will be established by the Engineer. The contractor may furnish cost data which might assist the Engineer in the establishment of such rental rate. The rental rates shall be agreed to in writing prior to the use of such equipment on force account work or paid for by invoices in the case of outside rented equipment.

(b) Stand-By Time:

Equipment that is in operational condition and is standing by with the Engineer's approval for participation in Force Account Work shall be paid for according to the following Stand-By Rate (SBR):

$$SBR = F \times \left| \frac{R}{176} \right| \times 1/2$$

Payment for "stand-by" will be limited to not more than eight hours in a 24-hour day or 40 hours in a normal week. No compensation shall be allowed for equipment that is inoperable due to breakdown. No payment shall be allowed for equipment that is not operating because work has been suspended by the contractor for the contractor's reasons.

(c) Outside Rented Equipment:

In cases where a piece of equipment to be used is rented or leased by the contractor from a third party exclusively for force account work, the contractor will be paid as follows:

Rental Invoice + HOC

(d) Owner-Operated Equipment:

Payment for rental of equipment owned and operated by persons other than the prime contractor's or subcontractor's will be based on the actual paid invoice.

An amount equal to 10 percent of the total rental of the equipment, including the owner-operator, will be added for overhead, profit and all other costs incidental to furnishing and operating the equipment. The Engineer shall approve the rental rates prior to commencement of the work.

(e) Moving of Equipment:

Rental time will also be allowed for the time required to move needed equipment to the location of the force account work and to return it to its original location. Loading and transportation costs will be allowed in lieu of moving times when equipment is moved by means other than its own power. Moving time back to the original location or loading and transportation costs will not be allowed if the equipment is used at the site of the force account work on contract items or related work.

For use of equipment moved on the work exclusively for force account work, the cost of transferring the equipment to the site of the work and returning it to the original location will be allowed as specified herein as an additional item of expense.

The original location of the equipment to be hauled to the site of the work shall be agreed to by the Engineer in advance.

Where the move of the equipment is made by common carrier, the allowance will be the invoiced amount paid for the freight plus fifteen percent. If the contractor hauls the equipment with its own forces, rental will be allowed for the hauling unit plus the driver's wages and the cost of loading and unloading the equipment.

The maximum rental period for the day that the equipment is moved on the work and the day that the use of the equipment is discontinued shall be the actual time that the equipment is in operation on force account work.

(4) Superintendence:

No part of the salary or expense of anyone connected with the contractor's forces above the grade of foreman and having general supervision of the work will be included in the labor items as specified above, except when the contractor's organization is entirely occupied with force account work, in which case the salaries of the superintendent and the timekeeper may be included in the labor item specified above when the nature of the work is such that their services are required.

(5) Compensation:

The compensation as set forth above shall be received by the contractor as payment in full for work done on a force account basis. In addition, the contractor shall be paid an amount equal to 65 percent of the force account compensation times the applicable sales tax rate.

(6) Statements:

All statements shall be accompanied and supported by receipted invoices for all materials used and transportation charges. If materials used on the force account work are not specifically purchased for such work but are taken from the contractor's stock, then instead of invoices, the statements shall contain or be accompanied by an affidavit of the contractor certifying that such materials were taken from stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the contractor.

The contractor and subcontractor will submit an equipment list for all equipment to be used during the contract, an equipment rate sheet, and a labor rate sheet, all within 30 days after contract award, but prior to the start of any force account work.

The contractor shall submit payrolls and other cost data documents for all force account work within 30 calendar days after completion of the work. No partial payment will be made. All invoiced work must have documentation for payment. Final payment will not be made for work performed on a force account basis until the contractor has furnished duplicate itemized statements of the cost of such force account work detailed to the following:

Name, classification, date, daily hours, total hours, rate and amount for each foreman and laborer.

Designation, dates, daily hours, total hours, rental rate and amount for each unit of equipment.

Quantities of materials, prices and amounts.

Transportation charges on materials, FOB jobsite.

(7) Force Account Work by Subcontractors:

When force account work is determined by the Engineer to require specialized labor or equipment not normally utilized by the contractor, and such force account work is performed by subcontractors, the contractor will be allowed an additional markup based on the following:

- (a) For the first \$10,000.00 of work performed by subcontractors (less markups for overhead and profit), the contractor will be allowed a 10-percent supplemental markup.

- (b) For all work in excess of \$10,000.00 performed by subcontractors (less markups for overhead and profit), the contractor will be allowed a five percent supplemental markup.

The 10-percent supplemental markup shall apply to the first accumulated total of all force account work performed by subcontractors.

(8) Bond:

An amount of 0.5 percent of the total amount will be added for the Performance and Payment Bond.

(E) Non-Allowable Charges:

If the contractor chooses to accept Force Account, then the contractor's compensation in any Supplemental Agreement will only be for what is stated in the above Force Account provisions.

Whether the amount of Supplemental Agreement negotiated is for unit price, Lump Sum Agreement or Force Account, in no case will the contractor be reimbursed for the following items:

- (1) Profit in excess of that provided herein;
- (2) Loss of profit;
- (3) Home office overhead;
- (4) Consequential damages, including loss of bonding capacity, loss of bidding opportunities and insolvency;
- (5) Indirect costs or expenses of any nature;
- (6) Attorneys fees, claims preparation expenses or costs of litigation.
- (7) Interest

109.05 Eliminated Items:

The Engineer may, upon written order to the contractor, eliminate items from the contract and such action shall in no way invalidate the contract. The contractor will be compensated under the provisions of Subsection 108.11.

109.06 Partial Payments and Retention:

If satisfactory progress is being made, the contractor will receive a payment each month based on the amount of work completed during the preceding month. Except as herein

provided, the Department will retain five percent of each monthly statement of amount earned until the final acceptance of the work.

The acceptance of work for purposes of partial payment does not constitute final acceptance of the work.

Should any defective work or material be discovered prior to the final acceptance or should a reasonable doubt arise prior to the final acceptance as to the integrity of any part of the completed work, the payment for such defective or questioned work will not be allowed until the defect has been remedied or cause for doubt removed.

The monthly payments will be approximate only and all partial statements and payments will be subject to correction in the final statement and payment. If the total amount of the retained percentage of the contract is greatly in excess of the incomplete and unaccepted portion of the contract, the contractor may be allowed a portion of this suspended payment, provided that the contractor files with the Department a consent of the contractor's surety to such payment and provided that the Department at all times retains an amount sufficient to enable it to complete the unaccepted or incomplete work in the contract.

Partial payment on either a lump sum item or on an item paid for as a unit may be made if the amount of work, in the opinion of the Engineer, is of sufficient magnitude to warrant partial payment. The amount of the partial payment to be made will be in proportion to the percentage of the work completed on the item, as estimated by the Engineer.

109.07 Partial Payment for Material on Hand:

Materials listed below may be considered for partial payment without the execution of a supplemental agreement, when the materials are delivered and stockpiled or produced on the project site or on another site approved by the Engineer. Such partial payment will be made at the contract unit price for the quantity of material on hand multiplied by the Partial Payment Factor.

Partial Payment	
Type of Material	Factor
Aggregate Subbase	0.45
Aggregate Base	0.60
Mineral Aggregate	0.40
Cover Material	0.35
Structural Steel	0.60
Reinforcing Steel	0.60
Corrugated Metal Pipe	0.50
Structural Plate Pipe or Pipe-Arch	0.65
Concrete Pipe	0.45
Flared End Section for Pipe Culvert	0.70
Cattle Guard Grill	0.60
Guardrail (Rail and Brackets)	0.50
Guardrail (Posts)	0.20

Partial Payment	
Type of Material	Factor
Fencing (Posts and Wire)	0.40
Precast Concrete Bridge Members (after curing period is completed)	0.80
Vertical Support for Breakaway Sign	0.60
Perforated Sign Posts	0.50
Cantilever and Bridge Sign Structures	0.60
Sign Panel	0.40

Material for items of work whether shown above or not, may be considered for partial payment without the execution of a supplemental agreement, when the materials are delivered and stockpiled or produced on the project site or on another site approved by the Engineer. Such partial payment will be made at 100 percent of invoice cost, but shall not exceed 80 percent of the total item bid amount.

Partial payment will be made only if the material is approved by the Engineer and if satisfactory progress is being made on the contract work by the contractor.

No partial payment will be made for living or perishable plant materials until they are planted.

No partial payment will be made for materials stockpiled at a commercial source.

109.08 Payment of Withheld Funds:

Attention is directed to Subsection 109.06 and in particular to the retention provisions of that subsection.

Upon the contractor's request, the Department will make payment of funds withheld from progress payments if the contractor makes an assignment to the Department of time certificates of deposit or securities, under an agreement approved by the Department.

The securities will be deposited in a joint escrow account to be held by a bank or savings and loan institution licensed by the State whose principal office is in Phoenix and in an amount at all times equal to or greater than the amount that would normally be withheld under the provisions of Subsection 109.06.

Securities must be time certificates of deposit of banks licensed by this state, securities of or guaranteed by the United States of America, securities of this state, or of counties, municipalities or school districts within this state, or shares of savings and loan institutions authorized to transact business in this state. In no event will the Department accept a time certificate of deposit of a bank or shares of a savings and loan institution in lieu of retention unless accompanied by a signed and acknowledged waiver of a bank or savings and loan association of any right or power to set off against either the Department or the contractor in relation to the certificates or shares assigned.

109.09 Acceptance and Final Payment:

When final acceptance has been made in accordance with the requirements of Subsection 105.20, the Engineer will prepare the final estimate of quantities of the various items of work performed.

Final payment will be made in accordance with the Engineer's final statement of the total amount earned by the contractor.

The final payment will not be made until all quantities have been checked and verified. The final payment will generally not be made before 60 days after the date of final acceptance of the work by the Engineer, although final payment may be made in 60 days or less at the sole discretion of the Department, but only when all quantities have been checked and verified.

The cost of any work, material, equipment or incidental specified in the Division I, for which no direct payment has been specified in the proposal, shall be considered as included in the contract unit price for one or more of the contract items.

109.10 Lump Sum Payment for Structures:

(A) General:

When the Bidding Schedule contains items, shown with an alpha or numeric suffix, and approximate quantities required to complete specific structures or designated groups of structures, the contractor will be compensated on a lump sum basis.

Bidders shall specify a unit price and an extended amount for each item within the lump sum structure or group of structures for which a quantity is given. No separate total for each structure will be shown on the bidding schedule. The lump sum amount shall be the total of the extended amounts for all items related to each structure or group of structures as designated by the same alpha or numeric suffix, except for driven piles, caissons, and drilled shafts, which will be paid for under their respective contract items.

Bidders shall verify the accuracy and completeness of the quantities listed in the Bidding Schedule, and bid prices shall reflect the cost of quantities which the contractor determines to be necessary to construct the structure(s) and shall also include any additional costs for work necessary to complete the structure(s) but for which no bid quantities are listed.

(B) Adjustments Due To Quantity Variations:

For all items of work, other than the Structural Concrete, Structural Steel, Reinforcing Steel, Structural Excavation, and Structure Backfill items, no adjustment to the Bidding Schedule's, quantities, unit prices, and extended amounts will be made following the award of contract because of any errors or omissions made either by the Department in its calculations of quantities or by the contractor in its calculations.

Adjustments in the Bidding Schedule quantities for Structural Concrete, Structural Steel, Reinforcing Steel, Structural Excavation, and Structure Backfill may be initiated by the

contractor or the Engineer if evidence indicates that the required quantity varies by an amount greater than five percent of the Bidding Schedule quantity. The contractor shall advise the Engineer in writing, submitting such evidence and requesting an adjustment of the quantities. The Engineer will determine the amount of adjustment, if any. The quantity upon which payment will be based will be the Bidding Schedule quantity plus or minus only that portion of the adjustment that exceeds five percent of the Bidding Schedule quantity. No adjustment to contract time will be allowed due to lump sum structure quantity variations.

(C) Adjustments Due To Revisions Ordered By The Engineer:

If the Engineer orders a revision in the project plans or specifications for a specific structure or group of structures contracted under this provision and the revision affects work for which Bidding Schedule items have been established, each item affected shall be considered a major item, and the unit price shall be subject to revision in accordance with the requirements of Subsection 104.02. Payment to the contractor will be adjusted by an amount equal to the product of the quantity adjustment and the unit price bid or the revised unit price as appropriate.

If the revisions affect work for which no Bidding Schedule item has been established, payment for this work will be made in accordance with the requirements of Subsection 104.02.

(D) Payment:

Payment for all work necessary to construct the structure(s), including but not necessarily limited to all excavating, backfilling, foundations, concrete, reinforcing steel, structural steel, expansion joints, bearings, approach slabs, post tensioning systems, handrails, and utility and lighting conduit systems, will be made on the basis of the lump sum amount as calculated by adding the extended amounts for all related bid items designated with the same alpha or numeric suffix, except as may be adjusted in accordance with Subsections 109.10(B) and (C).

Driven piles, caissons, and drilled shafts will be paid for under the respective contract items and will not be paid for under lump sum payment for structures.

Partial payments will be made in accordance with the requirements of Subsection 109.06, on the basis of the quantities shown in the Bidding Schedule for each structure and the respective unit prices. At least five days prior to the closing date scheduled for monthly progress payments, the contractor shall furnish the Engineer an estimate of the quantity of each item of work shown in the Bidding Schedule for which the contractor expects to be compensated. The Engineer shall be the sole judge as to the approximate quantities of work eligible for payment in any month. The total amount of all partial payments shall equal the lump sum amount, as determined above, or adjusted as specified herein.

Payments made for Structural Concrete will be adjusted, in accordance with the table shown in Subsection 601-6, for material which fails to meet the required 28-day

compressive strength when sampled in accordance with the requirements of Subsection 1006-7.